

ウザク式 麻雀学習 牌効率

著 G・ウザク

Question



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良問収録 + 納得の解説

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Uzaku's Guide to Mahjong Tile Efficiency

G•Uzaku

English Translation by
konomu

Sansai Books

All of Tile Efficiency, in One Book.

This is the third book of the Uzaku series, continuing from *Mahjong Kessaku Nanikiru 300sen* and *Mahjong Joseki Nanikiru 301sen*. The purpose of this book is to serve as more of a textbook on tile efficiency rather than simply offering example problems as my two previous books have done. This time, I'll be explaining tile efficiency in more detail than I've ever had in the past.

The content of this book is broad enough to be useful to both beginners and seasoned players. Although it is focused on tile efficiency, some parts of this book may be difficult for beginners to understand. But if you get confused, don't fret, just carry on reading! The point of this textbook isn't to completely master an idea before being able to move on to the next one. The best way to learn is to acquire an understanding for a concept, and then gradually build upon it.

I've provided an index with all of the example problems near the end of this book to use as a practice aid. If you're unsure of the answer to a problem, flip to the page where it is introduced and read the explanation.

Thank you to Nemata, Yuusee, JangoroK, and many others in the mahjong community for proofreading this book and scrutinizing my problems. Please enjoy.

G Uzaku

How to Use This Book

Many example problems in this book do not include contextual information such as turn number or seat wind. This means answers may be relatively less constrained than they often appear in practice.

If you prefer to have some context, assume that the game is in turn 7 for 1-shanten hands, turn 4 for 2-shanten hands, and that you are the west player.

Rule Settings

This book uses the newest M-League rules with red fives, kuitan, and atozuke present. Of course, the best move usually changes depending on rules. But if there is an red five in the problem, most of the time, you can think of it as a regular dora.



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Chapter 1

Blocks

We'll start with learning how to think of potential melds as “blocks” with five-block theory.





Lesson 01

Five-Block Theory (1)

In mahjong, you need to make four three-tile melds and one two-tile pair to win.



The pair of the hand is also known as the **head**. Every winning mahjong hand has four melds and one head, except kokushi musou and chiitoitsu.



These four melds and one head make five blocks in total. Of course, the head is only two tiles, but there's no way to know what tiles will become your head until you've won or you're in tenpai, so we count them as one block, just like we do melds.

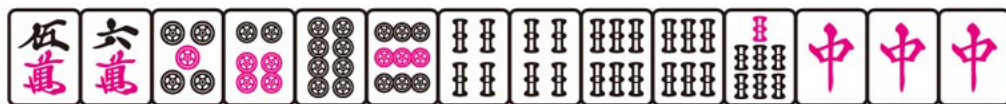


The above hand is in a shabo wait for and . If we draw , becomes our head. If we draw , becomes our head. As you can see, with this hand, it's impossible to know which block is our head until we've won.

In this sense, a winning hand will always have five blocks; no more, no less. Apart from the head, each block will always be either a run (), a set (), or a quad ().

When you have six blocks or more, we call this a **block surplus**.

Prob. A



First, split up the potential melds and potential heads.



We've split the hand into six blocks, so it has a block surplus. To get this hand to the desired four melds and one head, we must choose one of these blocks to cut. The best course of action is to find the strongest blocks and keep them, cutting the weakest block instead. This is the essence of five-block theory. Following this principle will get you to tenpai more often.

The correct answer is to cut . It's okay if you don't know why yet. It'll be second nature to you soon. Now, let's get to learning!

Vocab

Shabo: a shanpon wait; waiting on a tile to complete a set for one of two pairs.

Run (jp: *shuntsu*): a meld consisting of three sequential number tiles.

Set (jp: *koutsu*): a meld consisting of three of the same tile. Sets can either be open (called) or closed (not called).

Quad (jp: *kantsu*): a meld consisting of four of the same tile. Quads can either be open (called) or closed (not called).



The "five blocks" of five-block theory are the four melds and one head of your hand.

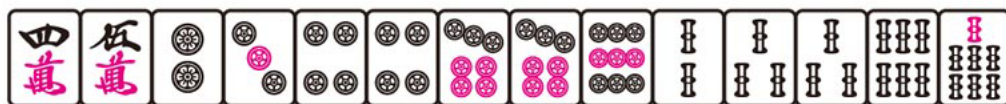
Aim for five blocks in your hand; no more, no less. If your hand has six blocks or more, it has a block surplus.



Lesson 02

Five-Block Theory (2)

Prob. A



Let's split this hand up into blocks.



We've ended up with five blocks, perfect for making four melds and a head. None of these blocks are especially weak, so we want to preserve all of them.

The correct answer is to cut the extra from . This move fixes the block into one meld, .

Cutting and going for tanyao isn't that bad, but you risk drawing which is four tiles of backfire. On the other hand, if you keep , drawing means you get to complete the meld . Cutting tiles with the least backfire is an excellent way to increase your tenpai rate.

Vocab

Tenpai: the state of your hand when one more tile is needed to win.

Shanten: the lowest possible draws it takes to get your hand to tenpai. A hand that is 1-shanten (*iishanten*) is one draw away from tenpai. A hand that is 2-shanten (*ryanshanten*) is two draws away. Usually, shanten isn't counted above 3-shanten (*sanshanten*).

Joint (jp: *taatsu*): a two-tile shape that is one draw away from forming a meld. These include the kanchan, penchan, and ryanmen joints. Sometimes they are called "potential melds".

Prob. B



Some people make a mistake by seeing as a quad and cutting . Try splitting the hand into blocks first.

It seems a bit complicated, but if you think of the two as a potential head, you'll see that we can split the four into one set and one run .



Since there are six blocks, we have a block surplus. Correctly splitting our blocks lets us see as a potential head. Notice that cutting it increases our shanten. If we cut , we won't be tenpai next turn no matter what tile we draw.

To lower our shanten, we need to drop one of our ryanmen joints: either , or . It'd be a waste to cut , so our best option is to cut , which shares acceptance of with . When two shapes interfere by accepting the same tile, it's called a **double acceptance**.

Some players might feel iffy about dropping a ryanmen joint, so think of it this way: all winning hands can only have five blocks, and sometimes, we have no choice but to drop strong joints.



It's easier to see which tile to cut once you properly group your hand into blocks.



Lesson
03

Five-Block Theory (3)


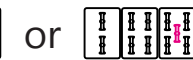
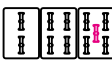



Prob. A




Try splitting this hand up into blocks yourself. How would you do it?



Here we have the manzu grouped into one block and the pinzu grouped into two, so we've already got three blocks secured. We're going for five blocks, so if we make two more from the souzu, we'll be good to go.

Splitting the souzu up like  +  or  +  works nicely. Since  is an excess tile in both groupings, the correct answer is to cut .

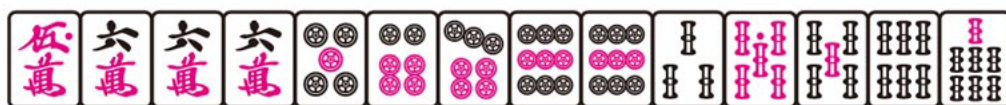
You might've been able to solve this problem intuitively, but the trick here is to recognize the ryanmen joint  from the mess in the souzu.

Keep in mind that sometimes, there is no single "best" way to group your tiles into blocks.

Vocab

Excess tiles: surplus tiles in your hand; tiles that do not contribute to your tile acceptance.

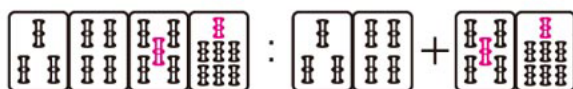
Prob. B



Cutting will put you in tenpai with a kanchan wait on , but if you need more points or a better wait, passing on the tenpai is also a valid move.

In addition to + , we can also group the manzu like + . Since there's a potential head in the manzu, we can drop the pair and go for a tanyao sanshoku 2-dora hand, a mangan even if we call.

The shapes below make a meld even when you cut one tile from them, but you can also split and treat them like two blocks. These are helpful to keep when your blocks are weak.



Sometimes there is no single "best" way to group your tiles into blocks.

Count how many more blocks you need from blocks you can see in your hand.

Answers

A:



B:



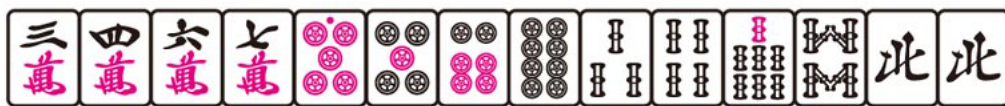




Lesson 04



Five-Block Theory (4)

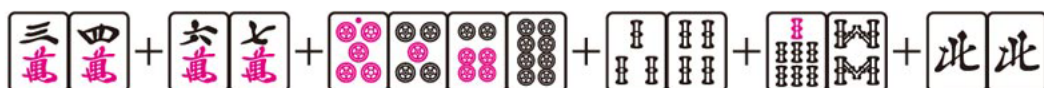
Prob. A


[West Player, Turn 2]




This problem includes the player's wind and the turn number. The line of tiles indicates the dead wall.  is turned over, which means the dora is .



Cutting  doesn't backfire when drawing  and gives us the most tile acceptance. It might seem like the best move, but there's another option. Take a look at the hand closely and count the blocks.



Even when considering pinzu as a single block, we have six blocks, a block surplus. And what's more, most of them are strong ryanmen joints. Considering how early it is in the game, dropping the  pair is our best bet.

If we cut  from this hand, we'd have to decide between joints when it progresses just one shanten.



This is what our hand would look like if we cut  and drew . Pretty difficult, huh?

The hand actually still has six blocks, so the best move would be to drop one of them.



On the other hand, this is what we'd end up with if we cut 此 from **Problem A** and drew 八. From here, cut the second 此. Then if we draw 二, we've got a chance at 6-7-8 sanshoku and tanpin.

It's easy to make mistakes with hands like **Problem A** and make wasteful cuts like 三. Properly splitting your hands into blocks helps you avoid missing good opportunities for high-scoring hands. If we're lucky and draw 二 early, our hand becomes very powerful, both in value and speed. Since we already have two dora, it'll be a mangan with tanyao and sanshoku even if we call. Hopefully, this helps you understand just how critical five-block theory is to mahjong in general.

Vocab

Dead wall: a 7×2 wall of tiles that usually remains at the end of a game. After a player kans, it's replenished with the last tile of the wall.



Realizing that your hand has a block surplus opens up other possible moves.



Lesson 05

Six Blocks (1)

Up until now, we've only discussed five-block theory. You might have also heard about a **six-block method** that directs you to maintain six blocks. Which method of play between the two is better is often subject to debate.



Prob. A

Here's a problem that'll stir up a discussion.

This is what the hand looks like, split into blocks. We treat the five-tile shape made by the souzu like two blocks here, so the hand has six blocks in total. According to five-block theory, we need to drop the weakest block, but where should we start?

Dropping the sanmenchan in the souzu is out of the question. The joint accepts the dora. is a strong shape that accepts - and . And if you're sharp, you may have realized that we've got a shot at 1-2-3 or 2-3-4 sanshoku, so cutting is also difficult. Also, is our potential head.

So there's possible yaku on every front of this hand, but we have to cut *something*.





Cutting  conforms to the five-block method, and cutting  conforms to the six-block method.

The advantage of the five-block method is that you usually won't end up with excess tiles. If you only need to consider your own hand, like in singleplayer mahjong, the five-block method is unequivocally the better way to play.

The advantage of the six-block method is that you can put off choosing between joints to drop. Because of this, it's sometimes cheapened as an indecisive way to play. But the six-block method is not without its benefits. For example, if an opponent kans a tile that you need to finish a joint, it's relatively easy to recover with six blocks. And depending on the situation, you'll be able to make use of the sakigiri effect.

Both the five-block and six-block method have benefits and drawbacks that are tied to each other. It's not productive to say that one is definitively better than the other. We can use both according to what our hand needs.

Vocab

Sakigiri effect: discarding certain tiles earlier, making it easier to win off of a discard because your discard pile is harder to read. For example, cutting  from  to declare riichi can tip off opponents that your waits are next to that tile (this is also called *sobaten*). If you cut  earlier, your opponents will be less likely to expect the  wait.



The six-block method lets you put off deciding your final hand's shape.

Use both the five-block method and six-block method according to need.



Lesson 06

Six Blocks (2)

The six-block method helps maximize acceptance, but it has a big drawback: you'll always need to revert back to five blocks.

Prob. A

This hand is the same as the last one. I've listed tile acceptances below. Note that cutting gives us the broadest acceptance.

Cut ... 9 kinds, 35 tiles

Cut ... 9 kinds, 31 tiles

Cutting delays choosing between joints to drop, which is the six-block method. Cutting the ryanmen joint, on the other hand, conforms to the five-block method.

Let's compare what we end up with if we draw , for each choice.

Cut : Draw

With the six-block method, we must revert to five blocks and drop one of our joints. Going for 2-3-4 sanshoku by dropping is the typical move here. No matter which tile you cut first, the other one in the joint becomes an excess tile, costing us at least one turn.



... 4 kinds, 16 tiles



With the five-block method, what we do next is obvious. After we cut and finish dropping the joint, we won't be left with excess tiles. This type of 1-shanten is called a **perfect 1-shanten**.



... 6 kinds, 20 tiles

	2-shanten	1-shanten
Cut (six-block)	9 kinds, 35 tiles	4 kinds, 16 tiles
Cut (five-block)	9 kinds, 31 tiles	6 kinds, 20 tiles

Notice that even though cutting in **Problem A** (at 2-shanten) increased our tile acceptance by four tiles, we lost four tiles of acceptance at 1-shanten.

Do you see how the timing of cutting surplus joints in your hand affects tile acceptance? We'll discuss when it is optimal to revert from six blocks to five blocks in a future chapter.

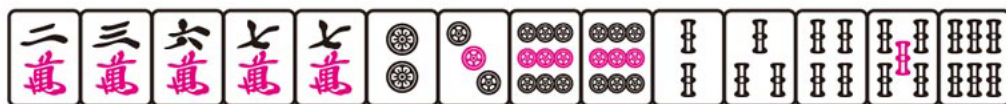


Maintaining six blocks could lower your tile acceptance later in the round.



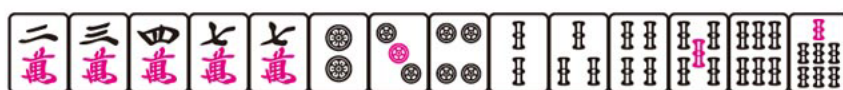
Six Blocks (3)

Prob. A



The same problem, once again. In the last lesson, I talked about and like they're your only two choices, but there's actually a third option: .

Even if we drop the pair from this hand, we'd still be able to go for 2-3-4 or even 1-2-3 sanshoku, as shown below.



As far as tile acceptance goes, cutting pales in comparison to or . But doing so doesn't increase our shanten, and it opens up the possibility of winning with riichi tanpin sanshoku in the best-case scenario. Once we've thought about the hand's final shape, doesn't seem like a bad choice. If you need to make a comeback during the final round, it's your best bet.


Technically, dropping the pair to go for 2-3-4 sanshoku conforms to five-block theory. Sanshoku requires three melds, leaving two blocks free: one meld and one head. Think of three blocks as being occupied by sanshoku.



Hopefully, this makes it easier to see why the third option works.

Splitting our hand into blocks lets us see another path toward an even higher-scoring hand. It's the exact same line of thinking we used in *Five-Block Theory* (4). The majority of hands with six blocks have a similar "third option," just like this one.

At this point, I imagine you might be asking, "So what exactly *is* the correct answer to **Problem A**?"

You could try putting this problem into a mahjong simulator, but what it considers the optimal move varies depending on the round number. Either way, different simulators give different answers. So for this problem, I consider there to be no solution. But for those of you who want something definitive, the simulator tends to lean toward cutting  for most turns. I believe this is because this choice makes it relatively easier to go for pinfu or sanshoku, and the final hand ends up scoring more points.

Info

Mahjong websites, simulators and other helpful resources assisting in the production of this book:

- » *Ara's Hitori Mahjong Lab*
<http://mahjong.ara.black/>
- » *I started studying mahjong*
<http://epsilon69399.blog20.fc2.com/>
- » *Mahjong Math Research Society*
https://note.mu/mahjong_math



Consider your hand's final shape before making a choice.

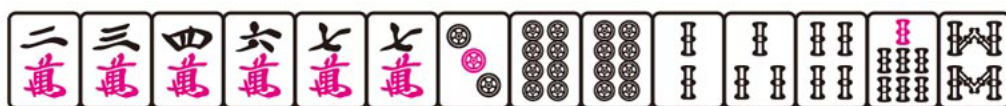
Most hands with six blocks have a "third option".




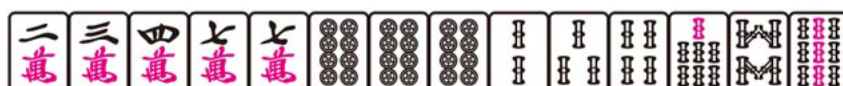
Six Blocks (4)






In some situations, it's good to make a sixth block when you already have five.


Prob. A



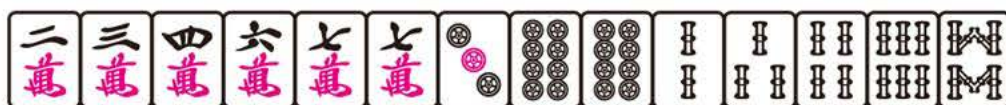
Cutting  puts you in perfect 1-shanten, but you may end up with a low-scoring riichi-only hand like below.












If you're in first with a significant lead, or nobody else is ahead by much, this isn't anything to worry about. But say, for instance, the game is in the south round already, and you're behind in points. The best possible move would be to cut , which ensures that your hand will at least have pinfu. Then, if you're lucky and draw  or  to stick to the floating , you can drop  and go for tanpin sanshoku.

When you're not hard-pressed for points, you don't have to cut , but there is still merit to keeping it. The return is big, and you can avoid winning riichi-only with a shot at a high-scoring hand.

Prob. B



In this case, it's better to leave  alone, even more so than in **Problem A**.

Cutting  fixes our only ryanmen. Then, if we draw , we can declare riichi with  for a riichi tanpin hand. If we draw a  or  for the  before the , we'll drop . So keep your hand balanced, and don't cut  immediately just because it's a bad joint.

The key idea here is to avoid unnecessarily cutting floating tiles that could make sanshoku, even when you already have five blocks. You can also do this with dora tiles, which is a bit more straightforward. If rushing your hand would lead you to a low-scoring win or leave you with bad waits, look toward making a sixth block.

Vocab

Hiraba (*lit.* level field): this term was once used to refer to games where tsumibou aren't being loaded, but now it's used in the sense that the point distribution is relatively even. Different players will tell you different criteria for what constitutes a hiraba but it's simpler to remember that if you're discarding differently from normal, the game is not hiraba.



Sometimes you should take lower tile acceptance to leave strong floating tiles.

Answers

A:   B: 



Lesson 09

1-Shanten Peak Theory

At this point, you've learned that taking broader tile acceptance in the short run can lower your tile acceptance later on. You've also learned that sometimes it's better to take lower tile acceptance in order to keep strong floating tiles.

So we know that we should pay attention and optimize for the shape our hand will take later on. But that raises the question: what point of the progression of our hand should we optimize for?

As your hand progresses and its shanten decrease, the number of effective tiles also decreases. This means that you have the lowest tile acceptance at any one point in your hand's progression during tenpai. However, this narrow acceptance is fine since you don't have to draw the effective tiles; you can win off of any opponent's discard.

Usually, the most difficult progression your hand makes is going from 1-shanten to tenpai. You've probably been there yourself, stuck waiting to draw a tile to put you in tenpai in-game.


This is why you should aim to have a broad tile acceptance at 1-shanten. To do this, keep in mind:

1. Look ahead so as to not leave excess tiles in your hand during 1-shanten.
2. Usually, you should drop a joint instead of maintaining six blocks at 2-shanten.
3. Don't worry too much about advancing shanten early on.

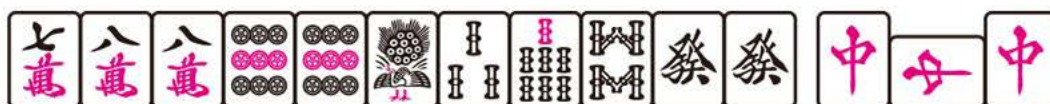
Play to optimize for the shape your hand will take at 1-shanten. That's pretty much the gist of 1-shanten peak theory.



Prob. A



This hand is at 3-shanten with six blocks. Don't worry about maximizing tile acceptance to advance shanten this early on. Cut  and go for chanta sanshoku. We will cut the hand down to five blocks after completing one meld at 2-shanten.

Prob. B



This hand is at 2-shanten with six blocks. This time, we should cut the hand down to five blocks. Pon is faster than chii, so drop the  joint. Pushing for chanta and cutting  here maintains six blocks, which means that if you complete another meld, you'll have an excess tile at 1-shanten.

Info

1-shanten is pronounced iishanten. 2, 3, and 4-shanten are pronounced ryanshanten, sanshanten, and suushanten respectively.



Play to optimize the shape your hand will take at 1-shanten.

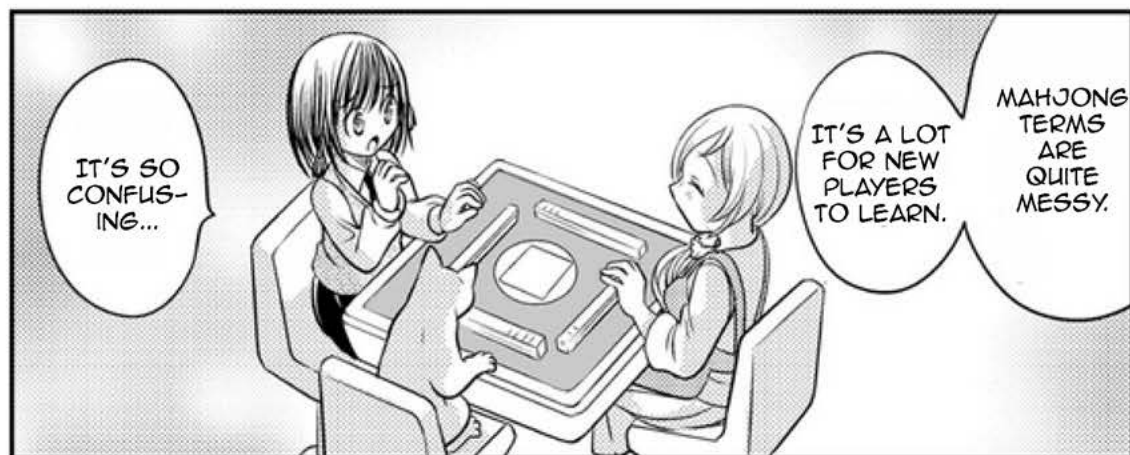
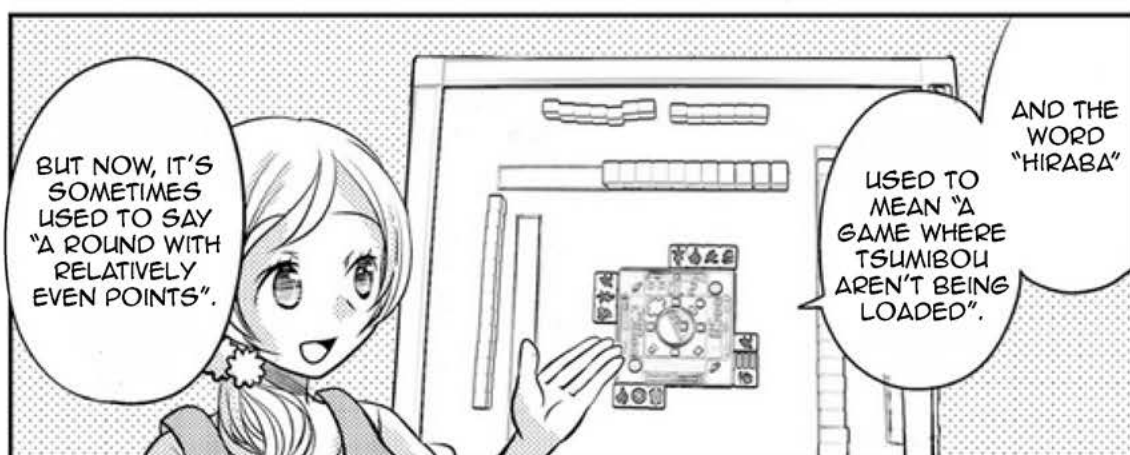
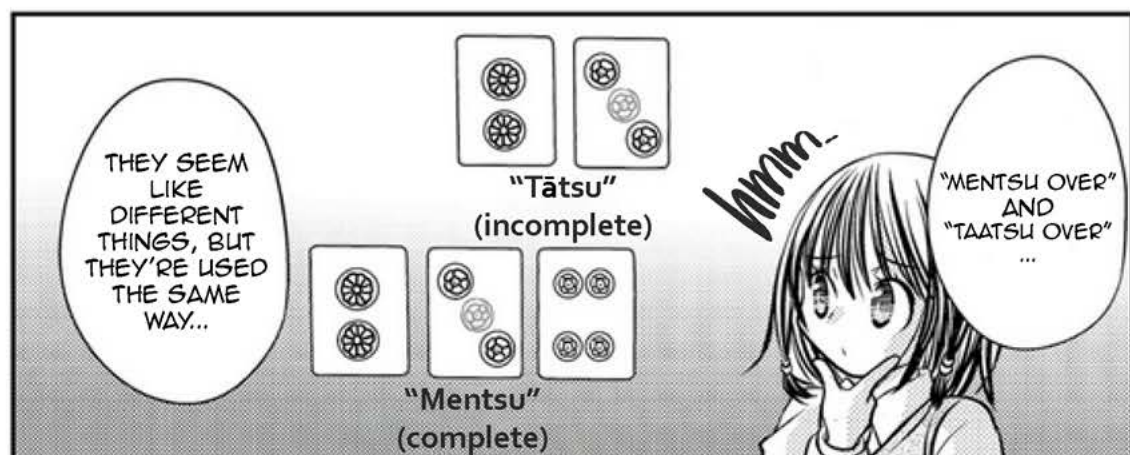
Look ahead so as to not leave excess tiles in your hand during 1-shanten.

Usually, you should drop a joint instead of maintaining six blocks at 2-shanten.

Don't worry too much about advancing shanten early on.

Answers

A:  B: 



Chapter 2

Heads

Back in the day, the head of the hand was seen as unimportant, something that could be made at any time. Now, we know that heads are central to strategy. We play differently depending on how many heads we have.

In this chapter, we'll talk all about heads.









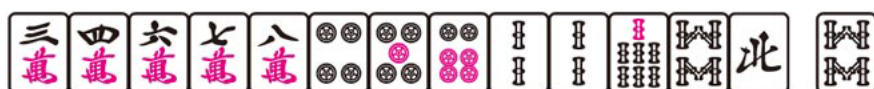








Lesson 10

Two-Head Theory (1)



This hand is at 1-shanten, accepting , , , and .  is our potential head and  is being kept as a safe tile.








Here we've drawn . If we cut , we would be in perfect 1-shanten. Because this shape allows both  and  to be seen as potential heads, we would gain a tile acceptance of two  tiles and two  tiles, a useful four additional tiles of acceptance.






When you have two pairs in your hand and both are potential heads, the hand is said to have "two heads". Recognizing and maintaining these two heads is the basis of "two-head theory".

Drawing another tile of either of the two heads forms a closed set, making the other pair our head. If the remaining head becomes a closed set, you'll have to make another pair to be your head.

Two heads in a hand is powerful. Aim for a good shape 1-shanten by maintaining these two heads and you will get to tenpai faster.




To assure that we have the safe tile  to cut when we get to tenpai, we can preemptively cut  here. Cutting an effective tile early like this is called **sakigiri**. This can misdirect opponents into thinking that  was a floating tile in our hand, lowering their guard on waits surrounding that tile.

Tiles outside of other tiles of the same suit cut early before tenpai are considered safer, so to sakigiri  makes it easier to win off of a  discard. This is a big benefit compared to losing four tiles of acceptance.

But because this particular hand could also wait with tanyao and not just pinfu, we should keep the . If we keep  as a safe tile, we can't take a tenpai with tanyao through  and . It's not worth losing four tiles of acceptance over. We should keep .



In cases like this where tanpin sanshoku is possible, it's worth disregarding the additional four tiles of acceptance.

When opponents have already cut several tiles of  and , leaving  in our hand becomes less beneficial, especially after midgame since it's less likely for one of the heads to become a closed set.

Info

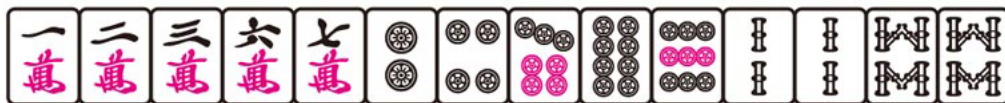
The actual effectiveness of sakigiri in practice has been reevaluated in recent times. After knowledge of five-block theory and two-head theory became widespread, fewer people built hands with six blocks. As a result, fewer people were doing sakigiri. This had an effect on how people generally read discard piles. These days, there are players who try to take advantage of this fact and sakigiri offensively. In the future, we may see the effectiveness of sakigiri fluctuate depending on the dominant style of mahjong.



Decide to keep the safe tile or to take the perfect 1-shanten depending on whether the four tiles of acceptance are worth it or not.

Two-Head Theory (2)

Prob. A



Let's split this hand into blocks first.



We end up with six blocks, so there is a block surplus. We should drop one of them, according to five-block theory.

It all boils down to either the kanchan in the pinzu, or one of the pairs in the souzu. Which one is the best to drop?





We could look at the tile acceptance of each of our choices. It turns out that no matter which one we go with, we end up with a total acceptance of 12 tiles.





Cut  4 kinds, 12 tiles






Cut  4 kinds, 12 tiles

Cut  3 kinds, 12 tiles


Cut  3 kinds, 12 tiles

There is a reasonable argument to be made for dropping a pair since drawing  leaves us with a ryanmen wait and a pinfu hand. The kanchan takes four tiles, same as the combined acceptance of the two pairs  and , so dropping a pair doesn't change our tile acceptance. But the correct answer here is still .

The key point here lies in ryanmen upgrades. The only draw that could upgrade the kanchan  into a ryanmen are the four tiles of , but keeping the two heads leaves us open to draw either  or , eight tiles of ryanmen upgrades.

Notice that cutting  first keeps the acceptance of effective tiles for  open in our hand. If we drew an effective tile in the souzu at this point, we would just cut , but if we drew  before that, it would give us the ryanmen .

Therefore, it is possible to get into a pinfu tenpai even while leaving both pairs in our hand.

Cutting  is definitively the best in all metrics: tenpai rate, win rate, and good wait tenpai rate.

Vocab

Good wait tenpai rate: measures the probability of getting to tenpai with a good wait. The opposite of this is "bad wait tenpai rate".



Compare the number of tiles that put you in tenpai to the number of ryanmen upgrades.

Two-Head Theory (3)



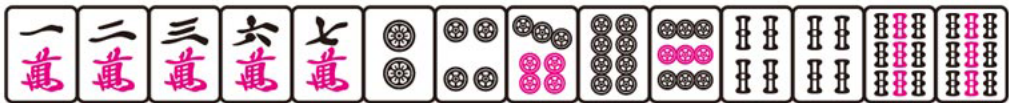
Let’s switch out the pairs in the last chapter’s problem with some others and see how that affects our decisions.

Table of Ryanmen Upgrades for 2 Heads

	None	1 kind, 4 tiles	2 kinds, 8 tiles
	1 kind, 4 tiles	2 kinds, 8 tiles	3 kinds, 12 tiles
	2 kinds, 8 tiles	3 kinds, 12 tiles	4 kinds, 16 tiles

Does not apply to cases where heads are close together and effective tiles overlap.

Prob. A

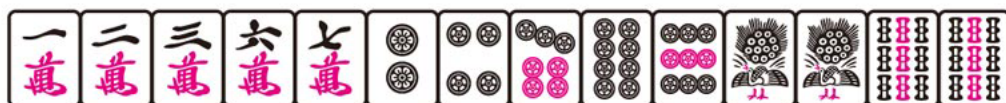


Since there is no pair in the table above, we look in the column. The bottom left cell indicates that these two heads have 8 tiles in 2 kinds of ryanmen upgrades. It’s better to leave the 2 heads. Cut .



Vocab





2D WWYD: a 2D WWYD (What Would You Discard?) is a problem that does not include a discard pile to consider. Problems that include the discard piles of all players are called 3D WWYDs.

Prob. B



The upper-left cell of the table indicates that neither of the pairs in this hand has any ryanmen upgrades.

It's easier to go for pinfu if we drop a pair here. We could also drop the kanchan since the  and  shanpon is powerful and easy to win off of after riichi'ing. It's hard to provide a definitive answer for 2D WWYDs like these, so you should account for context for this situation during real games and play accordingly.

The broad consensus for this problem, without any provided context, is  ( if you're going for junchan). This is because it's more likely that you draw - for tenpai, and it's somewhat better to have a guaranteed good wait than the possibility of getting pinfu.

If you don't want to memorize the table, just remember that it's better to leave the pairs alone as long as you have one pair that is good for getting ryanmen upgrades. Also, keep in mind that you should account for yaku like sanshoku and tanyao when making these decisions. Cases where it's better to keep the kanchan are rare. Most of the time, you're better off maintaining the two heads. As they say, "two heads are better than one"!



Leave the pairs alone if there's one that's good for getting a ryanmen upgrade.

Between a kanchan and two heads, you should usually keep the two heads.

Answers

A:



B:





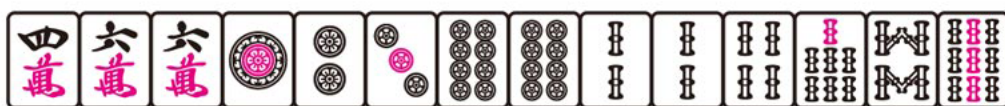
Lesson 13

Three Heads is Worst (1)

In two-head theory, we learned that having two heads in our hand is powerful. But what happens when we draw another pair and end up with three heads? This time, our hand gets weaker.

Here we'll learn a new technique called **undoing** a pair. To undo a pair, simply cut one tile from the pair and use the other tile in your hand, leaving it open for ryanmen upgrades. When your hand has three heads, undoing a pair can net an additional two tiles of acceptance.

Prob. A







Cut  Undoing the pair ...     4 kinds, 12 tiles





Cut  Undoing the pair ...     4 kinds, 12 tiles

Cut  Fixing the pair     4 kinds, 10 tiles

Cut  Fixing the pair     4 kinds, 10 tiles

As you can see, when your hand has three heads, undoing a pair gives you the most tile acceptance.

The two-tile difference in acceptance stems from the doubling of the shanpon shape. If you're confused, look at it in terms of how many tiles could backfire on you depending on what you cut. If you cut , your backfire is the four tiles of . But if you cut , your backfire is the remaining two tiles of . The difference in backfire between these two choices is two tiles. As for which pair you should undo, choose the pair which is most likely to get a ryanmen upgrade.

The correct answer is . Undoing the  pair gives us a joint that could upgrade to a ryanmen through two kinds of tiles,  and . It leaves us with two heads, which is powerful, as we learned in *Two-Head Theory* (1). If either of them becomes a closed set, the other one becomes the head of the hand.

The idea that “three heads is worst” shows up in *Utahime Obaka Miiko* by Katayama Masayuki (Takeshobo).

Since we know that two heads in a hand is powerful, three heads in a hand is weak, and that with four heads, we could go for chiitoitsu, we can logically conclude that “three heads is worst.” We'll discuss hands with four heads in later lessons.

Info

Katayama Masayuki

Famous mahjong gag comic artist. Notable works include *Gyuanburaa Jikochuushinha*, *Super Jigan* and *No Mark Bakuhaïtou*.

Point

Increase your tile acceptance by two tiles by “undoing” pairs.

Answers

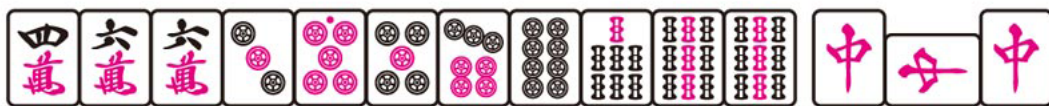
A: 






Lesson 14




Three Heads is Worst (2)

Prob. A







The , , and  pairs give this hand three heads.

Undoing the , , and  pairs gives us the broadest tile acceptance, but we'd be left with only one head after calling pon and advancing to 1-shanten. There would also be excess tiles in our hand, which narrows our acceptance.

For example, if we cut  and pon , we end up with the hand below.  turns into an **idle tile**, not contributing to the hand.



This is why you shouldn't undo a pair in every case where you have three heads. The example above is a called hand. We should expect to pon a pair and maintain two heads when we get to 1-shanten. This means keeping three heads in the hand at 2-shanten.

So the correct answer is to fix a pair, cutting either , , or . Of these three options,  leaves us with the best final shape and keeps the red acceptance.

In practice, situations where undoing a pair is the best move are quite limited. You can't use this technique if the hand isn't closed. And even if it is, sometimes undoing a pair at 2-shanten results in weak shapes at 1-shanten and narrows tile acceptance.

Special attention needs to be paid to such decisions in these situations. You should prioritize playing for the highest tile acceptance at 1-shanten (as in 1-shanten peak theory) and also maintaining 2 heads at 1-shanten (as in two-head theory).

The marginal benefit of undoing a pair is usually only two tiles of additional acceptance, so it's often superceded by some other benefit. Especially in the early-game, two tiles of acceptance isn't worth breaking a shape that could become stronger later on.

As the game progresses, it becomes harder and harder to reach tenpai. You might want to maximize tile acceptance as much as you can in the moment, but it's much more useful to pay attention to the turn number and balance your present acceptance with your future acceptance.

So, in the end, should we do away with "three heads is worst"? Not quite. Understanding when and where you should take advantage of that two-tile benefit is nonetheless a component of higher-level play.

Vocab

Idle tile (jp: *asobiha*): tile that does not contribute to your hand. Often synonymous with "excess tile", but this book distinguishes between the two terms.

Open hand: hand that uses calls (especially pon) to progress.

Closed hand: hand that remains closed.



You should maintain three heads in called hands so you can call pon.

Undoing a pair is usually only useful in closed hands.

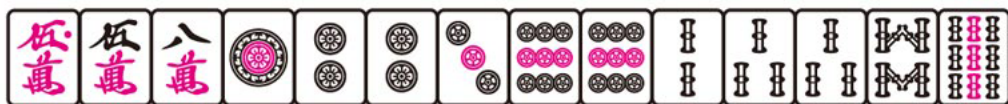


Lesson 15

Four Heads or More

We've just learned that having three heads in a hand is weak. Now, what about when you draw another pair and end up with four heads? With four or more heads in a hand, you can start looking to build a chiitoitsu hand, so it's not exactly bad. Pay attention to the number of heads in your hand to avoid missing good chiitoitsu opportunities.

Prob. A



This hand is in 2-shanten both as a meld hand and a chiitoitsu hand.

Be careful not to ruin the chiitoitsu opportunity by cutting or . Keep it simple and cut .

Prob. B





Preserve chiitoitsu by cutting . This choice also gives us the broadest tile acceptance, with 25 tiles in 8 kinds.


Ignoring chiitoitsu and turning the pinzu into a ryankan by cutting isn't too bad, but it only nets us an acceptance of 16 tiles in 4 kinds. Compared to , this is a nine-tile loss.

Chiitoitsu literally means “seven pairs” in Chinese—as expected, a winning hand consists of seven pairs. A hand with six pairs is in tenpai. Five pairs is 1-shanten. And four pairs is 2-shanten for a chiitoitsu hand no matter how messy your hand is. Any hand is at most 6-shanten from chiitoitsu, so there is no such thing as 7-shanten for a chiitoitsu hand.

Prob. C



Preserving chiitoitsu and cutting  gives us the broadest tile acceptance, but in this case it's probably better to go for tanyao and 3-4-5 sanshoku with .

Winning hands cannot have iipeikou and chiitoitsu counted as yaku at the same time. Compare the 2 han of chiitoitsu and the 4 han of tanyao sanshoku iipeikou. Like in **Problem B**, by cutting , we lose nine tiles of acceptance, but this is more than made up for by the points yield.

Info

Iipeikou and chiitoitsu cannot be counted at the same time.



This hand could be viewed as either a chiitoitsu hand or ryanpeikou, but it cannot be counted as both at the same time. The hand will be scored according to the view that gives it the higher amount of points.



Pay attention to the number of heads and don't miss chiitoitsu opportunities.

Four pairs is 2-shanten for a chiitoitsu hand no matter how messy the hand is.

Answers

A: 

B: 

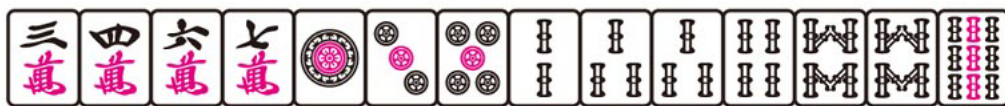
C: 









Lesson 16

One Head -Fixing Heads Close to the Edge-

Prob. A




This hand is in 2-shanten. Besides , we have no other potential heads, so cut  to fix  as this hand's head.

If we leave  alone and draw , we'd complete a meld, but we'd also have to make another head.  gives us the broadest tile acceptance anyway.

Cases like this where you have to fix a head close to the edge come up very frequently in-game, so remember this technique!



Let's flip the  over in **Problem A** and consider our choices for some other similar tile configurations.

The best move will often vary depending on the round turn. Assume the following examples occur relatively earlier in the game when you aren't in a rush.

- ▶ ... Drawing would give us a complex ryanmen joint, so it's even better to cut here than in **Problem A**. Fix the head and cut .
- ▶ ... The adjunct tile is on the inner side of the shape. Typically, we wouldn't cut here because drawing makes a ryanmen. Choose whether to cut , , or based on how far into the game it is.
- ▶ ... Drawing gives us the ayanmen so is more valuable to us here than in **Problem A**. But fixing the head is still marginally better in this case. Cut .
- ▶ ... Leave this shape alone. We could go for tanyao and maybe even pinfu on top of that if the pinzu in our hand develop nicely. Cut or .

As you can see from the above examples, when you only have one head in your hand, it's best to fix that head most of the time. We could also justify this with two-head theory—since the ideal developing hand has two heads, you should work toward that ideal and fix your only head. This isn't true in all cases, though, because sometimes we want to go for yaku like tanyao or we need more good blocks in the hand. Just keep in mind that it's always an option.



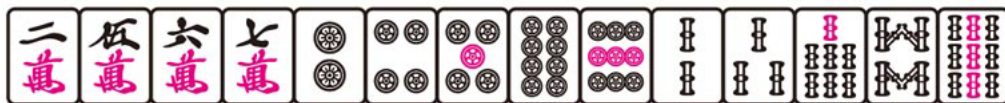
When you only have one head, in most cases, you should fix that head.




Lesson 17

No Head (1)




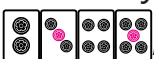




Prob. A



Both  and  are floating tiles. Which one of them should we cut?

We've already got two completed melds and two ryanmen joints, which is four blocks for our melds. So that means we need a head, but there aren't any pairs present in the hand.

This specific type of hand is called a **meld-complete headless 2-shanten**. This happens when we already have enough blocks for melds but still don't have any blocks that could be the hand's head.

Consider the  in the pinzu. You may be tempted to cut , but that'd be a mistake when you don't have a head. If we draw , we'd end up with , a shape that allows us to make a head by subsequently drawing either  or . The correct answer is to keep  and cut the floating tile .

After cutting , we should cut  after drawing any of , , , or .








This opens the hand up to as broad a tile acceptance as possible for making a head.

Prob. B

[West Player, Turn 1]



Starting hands this good call for a bit of careful consideration before we make our first move. Like in **Problem A**, it's a meld-complete headless 2-shanten.

Seeing as  or  wouldn't backfire on us, some of you would probably choose to cut . But with pinfu within reach, our first tile to discard should be . Drawing just one more tile of  or the guest wind  makes a head for pinfu. In contrast, we'd need to draw two more of the yakuhai  to get any yaku there.

In conclusion, there are some shapes and tiles that are worth keeping in your hand when you don't have a head. In mahjong, we like to use the term **headless** to describe such hands.

Vocab

Floating tile: tiles that aren't near any other tiles, like in a kanchan, ryanmen, or a pair.



When you have a meld-complete headless 2-shanten hand, open up the hand to as broad a tile acceptance for making a head as possible.

When you have a pinfu hand without a head, keep guest winds over yakuhai.

Answers

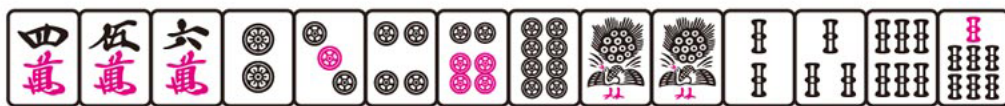
A:  B: 



Lesson 18

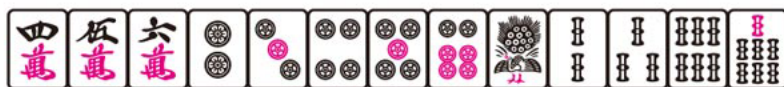
No Head (2)

Prob. A

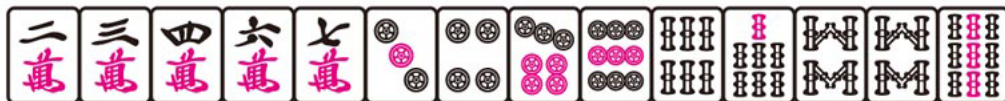


yields the broadest tile acceptance, but we should cut so that we can go for pinfu in case we draw - first.

We cut first instead of , just in case we draw , which connects the pinzu into a powerful shape. Then cutting gives us a very broad 1-shanten.



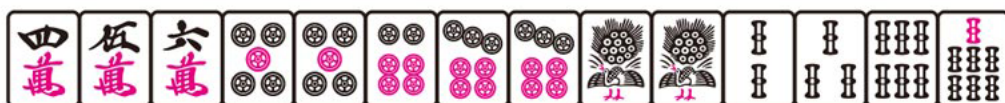
Prob. B



The shape makes is called a **penkanchan**. Sometimes it's seen as a weak shape, but it's very powerful when your hand has no head. Drawing any of - or - upgrades it into one meld and one head.

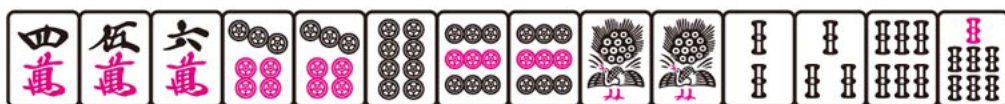
The correct answer is to drop the kanchan . You *could* go for tanyao and cut first but if you want to be safe, start from the . Note that cutting or gives us the maximum tile acceptance anyway, at 46 tiles.

Prob. C



yields the broadest tile acceptance and is the correct answer. ensures a good wait tenpai but compared to , we lose nine tiles of acceptance.

Prob. D



This is the same as **Problem C**, but with the pinzu shape shifted to the edge. In this case, it's better to cut .

In terms of tile acceptance, cutting gives us 25 tiles in 8 kinds, and gives us 20 tiles in 6 kinds. Even though we lose five tiles of acceptance, it's worth it since the final shape of the hand has a higher **expected value**. is still a valid move if you want to take the initial riichi or if it's late-game and you just want to get to tenpai, but you shouldn't justify cutting just because of the iipeikou yaku. In this hand, there's no way to get both pinfu and iipeikou, so we should prioritize pinfu.

Vocab

Expected value: the average value attained over many simulated realizations of a certain move. In economists' terms, the "anticipated earnings" you can expect after putting in some amount of money. With mahjong, you could think of this as your "anticipated points".



Sometimes weak shapes become powerful if your hand has no head.

Answers

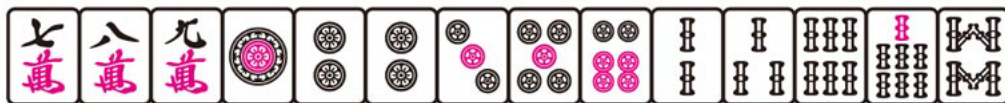
A: B: C: D:



Lesson 19

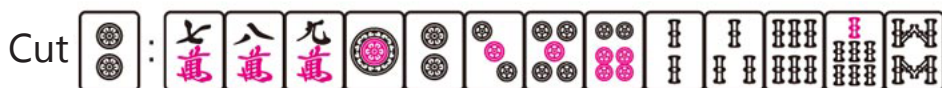
Fix the Joint or Fix the Head? (1)

Prob. A



A pinfu hand in 1-shanten. yields the broadest tile acceptance, but if we were to cut and and make our head, we'd have a **ryanmen-ryanmen** 1-shanten.

Let's compare cutting (fixing the meld) with cutting (fixing the head).



... 8 kinds, 28 tiles



... 4 kinds, 16 tiles

Cutting nets the larger acceptance, but if a ryanmen joint completes first, we end up with a tanki wait. To get a good wait tenpai, we'd have to draw either (4 kinds, 12 tiles) to make a head. Compare this to the 16 tiles in 4 kinds that complete a ryanmen joint. We have a 57% chance (16/28 tiles) of ending up with a tanki wait.

Cutting loses us 12 tiles of acceptance (a 43% decrease), but all of our acceptance stems from the ryanmen-ryanmen, so we will always end up with a ryanmen tenpai.

Let's put all of this information into an organized table.

	Tile Acceptance	Ryanmen Tenpai	Good Wait Tenpai Rate
Fix Meld (Cut )	8 kinds, 28 tiles	4 kinds, 12 tiles	43%
Fix Head (Cut )	4 kinds, 16 tiles	4 kinds, 16 tiles	100%

As far as tenpai rate goes, fixing the meld wins out easily, with 12 more tiles of acceptance than fixing the head. But fixing the head yields a broader acceptance toward a ryanmen tenpai, ensuring that you end up with a good wait in the end.

With other factors to take into consideration, it's hard to definitively say what the better option is.

Ultimately, it boils down to circumstance. If you are willing to risk ending up with a bad wait if it means you'll get to tenpai easier, fix the meld. If you want to make sure you'll have a good wait tenpai at the cost of making it harder for your hand to get to tenpai, fix the head.

Vocab


Ryanmen-ryanmen: used to describe a hand with two ryanmen joints, especially at 1-shanten. After you complete one ryanmen, the other becomes your wait at tenpai.




Fix the meld to increase tenpai rate, at the cost of risking a bad wait tenpai.

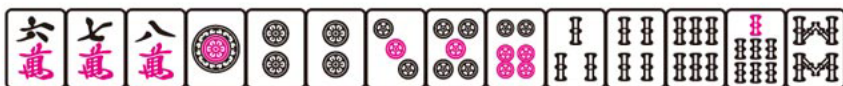
Fix the head to ensure a good wait tenpai, at the cost of narrower acceptance.

Fix the Joint or Fix the Head? (2)

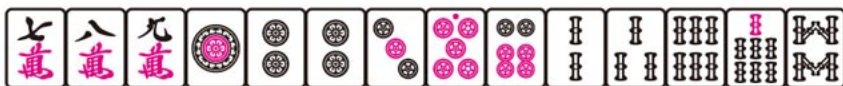
Dora and yaku in the hand can affect which path you should take when deciding on whether to fix the joint or head from shapes like .



Obviously, you'd want to preserve the dora in the shape if it was one of  so we'll take a look at some other cases.

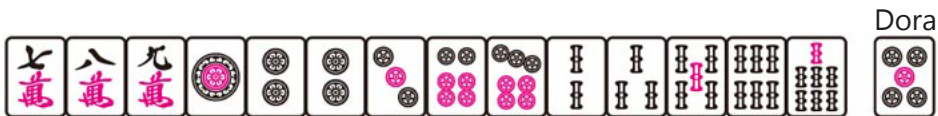
● Cases Where You Should Fix the Head




Fix the head when it ensures tanyao for the hand. With both tanyao and pinfu, this hand will score much higher, which offsets the narrowness in acceptance.






Fix the head when the ryanmen joints contain aka or dora. If you fix the meld in this hand and draw  afterward, you'd have to cut .



Fix the head when double dora () or other tiles that raise your hand's value can complete one of your ryanmen joints.

Vocab

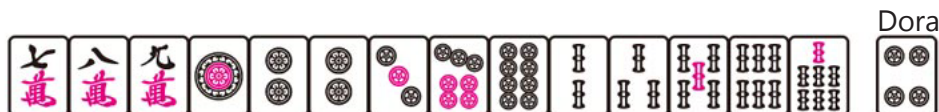
Slide: to shift a meld by one tile; i.e. cutting  from  after drawing .

Live tile: a tile kind that has not been discarded by any player yet.

● Cases Where You Should Fix the Meld



Fix the meld when you have a closed set. You can make a head easily by cutting a tile from the closed set.



Fix the meld when you can use the dora by sliding the meld. If you cut in this hand and then draw the dora , you could choose to slide the meld into or you could keep the nobetan shape.

Sometimes, you can fix the meld when the dora is a live yakuhai. Then, if you draw the dora and end up with the bad wait, you can take the tanki wait on the dora.

Don't decide whether to fix the head or meld based purely on the shape of the hand. Consider other factors, too, like the turn number and opponents' discards. Through mahjong simulator statistics, we know that tile acceptance becomes more and more important as the game progresses. So, fixing the head is more beneficial early on, and fixing the meld becomes better later in the game. I can't say precisely at what turn number it becomes better, because different mahjong simulators report different numbers. Just remember that fixing the head is effective in the early-game, and fixing the meld is effective from the mid-game onwards.



When you have dora, try to keep it. When you don't, make sure your hand can accept it.

Fixing the head is better early on, and fixing the meld is better later in the game.



Lesson
21

Fix the Joint or Fix the Head? (3)

Acceptances that result in nobetan and aryanmen waits will be distinguished from that of normal ryanmen waits with square brackets. Important information is highlighted in these tables.

Case A

	Tile Acceptance	Good Wait Tenpai	Good Wait Tenpai Rate
Fix Meld (Cut )	8 kinds, 28 tiles	4 kinds, 12 tiles	43%
Fix Head (Cut )	4 kinds, 16 tiles	4 kinds, 16 tiles	100%

This shape has no extended or complex shapes. In terms of good wait tenpai rate, fixing the head is better. If you fix the meld and one of the ryanmen joints completes, you end up with a tanki wait.

Case B

	Tile Acceptance	Good Wait Tenpai	Good Wait Tenpai Rate
Fix Meld (Cut )	11 kinds, 37 tiles	6 kinds, 18 tiles [8 kinds, 26 tiles]	49% [70%]
Fix Head (Cut )	5 kinds, 19 tiles	5 kinds, 19 tiles	100%

Tile acceptance toward a good wait tenpai for both options are about the same. If you fix the meld and the souzu ryanmen completes first, you end up with a nobetan wait.

Case C

	Tile Acceptance	Good Wait Tenpai	Good Wait Tenpai Rate
Fix Meld (Cut )	10 kinds, 33 tiles	6 kinds, 18 tiles [8 kinds, 26 tiles]	55% [79%]
Fix Head (Cut )	4 kinds, 15 tiles	4 kinds, 15 tiles	100%

Tile acceptance toward a good wait tenpai for fixing the **meld** is better. If you fix the meld and the souzu ryanmen completes first, you end up with a nobetan wait.

Case D



	Tile Acceptance	Good Wait Tenpai	Good Wait Tenpai Rate
Fix Meld (Cut )	10 kinds, 33 tiles	6 kinds, 18 tiles [8 kinds, 26 tiles]	55% [79%]
Fix Head (Cut )	4 kinds, 15 tiles	4 kinds, 15 tiles	100%

Tile acceptance toward a good wait tenpai for fixing the **meld** is better. If you fix the meld and the souzu ryanmen completes first, you can choose an aryanmen wait or a nobetan wait.

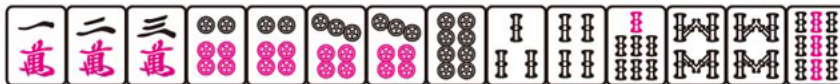
Case E



	Tile Acceptance	Good Wait Tenpai	Good Wait Tenpai Rate
Fix Meld (Cut )	9 kinds, 29 tiles	5 kinds, 14 tiles [7 kinds, 22 tiles]	48% [76%]
Fix Head (Cut )	4 kinds, 15 tiles	4 kinds, 15 tiles	100%

Tile acceptance toward a good wait tenpai for both options are about the same. If you fix the meld and the souzu ryanmen completes first, you end up with a nobetan wait.

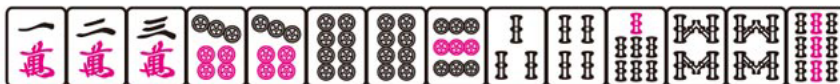
Case F



	Tile Acceptance	Good Wait Tenpai	Good Wait Tenpai Rate
Fix Meld (Cut )	9 kinds, 29 tiles	5 kinds, 14 tiles [7 kinds, 22 tiles]	48% [76%]
Fix Head (Cut )	4 kinds, 15 tiles	4 kinds, 15 tiles	100%

Tile acceptance toward a good wait tenpai for both options are about the same. If you fix the meld and the souzu ryanmen completes first, you end up with a aryanmen wait.

Case G



	Tile Acceptance	Good Wait Tenpai	Good Wait Tenpai Rate
Fix Meld (Cut )	8 kinds, 25 tiles	4 kinds, 10 tiles	40%
Fix Head (Cut )	4 kinds, 15 tiles	4 kinds, 15 tiles	100%

Tile acceptance toward a good wait tenpai for fixing the **head** is better. If you fix the meld and the souzu ryanmen completes first, you end up with a shanpon wait.



Lesson 22

Fix the Joint or Fix the Head? (4)

Cases B to **E** from the last lesson concern hands with shapes that contain four or more sequential tiles in an **extended** shape.

I recommend fixing the meld when you have extended shapes. However, some cases require a bit more nuance.

The good shape tenpai rate when you fix the meld in a hand without any complex or extended shapes (as in **Case A**) is 43%, but with an extended shape, this figure jumps up to around 50%. The difference arises because of the possibility of ending up with a nobetan or aryanmen wait.

If the pinzu end up becoming your tenpai wait (in **Cases C** to **E**) the ryanmen wait would only end up with a maximum acceptance of seven since you're using a tile you're waiting on in your hand. That's only a one-tile difference from the six-tile acceptance of an aryanmen or a nobetan wait—all the more reason to fix the meld when your hand has an extended shape.

Case B requires some clarification. This specific hand is tricky.



Because of how strong the -- wait is, it's not too bad to fix the head here. But on the other hand, even if you fix the meld, draw the -- first, and end up with a tanki wait, you could still recover a good wait by drawing a pinzu to connect to the existing shape.

It's not a hard and fast rule to fix the meld when you have an extended shape. In actual games, you should also consider the opponent's discards.

Case F and **Case G** both concern hands with complex (but not extended) shapes.



Fixing the head is slightly better in these cases because of the possibility of iipeikou. This is doubly true in the early-game.

In **Case G**, fixing the meld results in an acceptance of 10 tiles in 4 kinds toward a good wait tenpai, with a good wait tenpai rate of only 40%; the lowest of all cases we looked at. What's worse, if the souzu ryanmen completes first, you'll be stuck with a shanpon (or a tanki) wait. So save for the endgame, you should always fix the head for this case.

Overall, it's usually best in all cases to fix the head in the early-game to go for pinfu. As the game progresses and tile acceptance becomes more important, the optimal choice shifts toward fixing the meld instead.

Something else to consider is whether or not the wait for your nobetan or ayanmen would be easy to draw in the case that you have an extended shape in your hand. Always be ready to adapt to your opponents' discards.








Generally, you should fix the meld when you have an extended shape, but you also need to consider and adapt your opponents' discards.



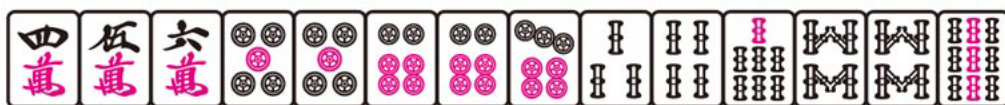
Lesson 23



Fix the Joint or Fix the Head? (5)

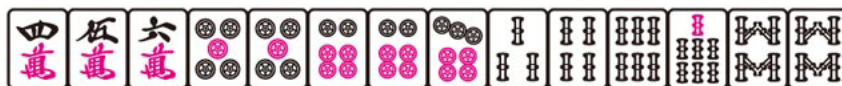
Up to now, I've been cutting the inner tile  first when fixing the head from the  shape.


Some of you are probably wondering if it's okay to cut from the outside with . Sure enough, you could make the argument that cutting  first opens you up to a good upgrade through drawing .

Prob. A



Say we want to go for tanyao and iipeikou by fixing the head here. Let's cut from the outside with . After that, we draw .



Now we should switch it up and fix the meld by cutting . Even though we risk the tanki wait, tanyao is secured, and pin-fu and iipeikou are possible. Don't forget that the game has progressed since the first state of this problem. As turn number increases, we should expand our tile acceptance and focus on getting to tenpai.

On the one hand, cutting like this leaves room for a potential upgrade. But on the other, you leave a dangerous tile in your hand.

Generally speaking, inner tiles are more likely to be won off of than outer tiles, so we consider them more dangerous. In

Chapter 3

Joints

Joints are the lifeblood of the unfinished hand—just one tile away from becoming a completed meld.

In this chapter, we'll discuss the value of different joints.

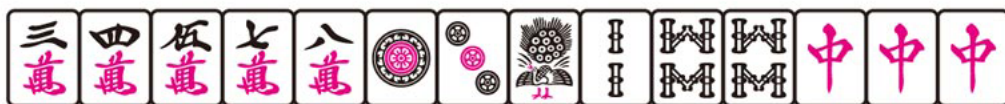










Lesson 24

Ryanmen > Kanchan > Penchan

Prob. A
















This hand has a block surplus, so let's drop one of them. Three of them are incomplete: the   ryanmen, the   kanchan, and the   penchan.

The order of the basic joints from strongest to weakest is ryanmen > kanchan > penchan. Therefore, the correct answer is to drop the penchan, our weakest joint.

You are probably already familiar with this concept as it's the first piece of theory many players learn, but allow me to elaborate a bit more here.

Ryanmens are strong because they accept two kinds of tiles. Penchans and kanchans only accept one kind of tile, so they're considered weak. Kanchans are still better than penchans because it's easier for them to upgrade into a ryanmen.

A   kanchan can upgrade into a   ryanmen in one turn, after drawing .

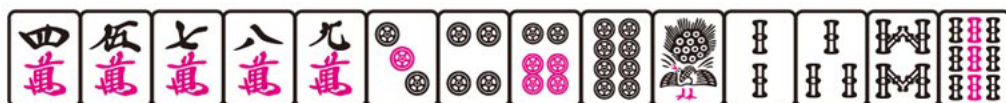
For a   penchan to upgrade into a ryanmen, it must first become a   kanchan, and only then through drawing  will they upgrade into a    ryanmen. We call this a "two-stage upgrade" or a "two-step upgrade".


Upgrade from a kanchan: 


Upgrade from a penchan: 

A penchan cannot become a ryanmen without first becoming a kanchan. You can think of them as the penchan as exactly one tier below the kanchan.

Prob. B



If you're having trouble with this problem, you're looking too deep into it. Just remember that the penchan is one tier below the kanchan and cut .

Cutting from the pinzu is self-sabotage. Picture what you'd end up with if you cut pinzu, but then drew .

Info

Now that you understand that penchans are a tier below kanchans, let's look at this from an opponent's point of view. If you see that someone has dropped a kanchan, you might assume that their hand contains no penchans. But there are some instances in which a player may keep a penchan, say, if they needed dora or yaku. It's more accurate to say that it's *likely* their hand has no penchan.

Point

The basic joints from strongest to weakest are ryanmen > kanchan > penchan.

The penchan is one tier below the kanchan.

Answers

A:  

B:  



Lesson 25

Comparing Kanchans (1)

The quality of kanchans may vary depending on where they're positioned.

Prob. A



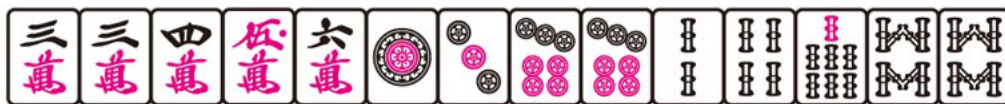
We must choose between the two kanchans and .

upgrades to a ryanmen with .

upgrades to a ryanmen with two kinds, and .

Leave the kanchan with more ryanmen upgrades. Cut .

Prob. B



We must choose between and .

Both kanchans have the same amount of ryanmen upgrades.




Tanyao is possible if we drop . Cut .




If you chose , you've made a mistake. Aim for a broader 1-shanten by cutting the hand down to five blocks while it's still 2-shanten.

Prob. C



We must choose between  and .

The hand has yakuhai, so we don't need to consider tanyao. Think about the tenpai wait. The kan- wait is closer to the outside than the kan- wait and is easier to win off of. Cut .

When you're playing with red fives, pay attention to whether or not your hand will be able to take them in, and make sure that you're not needlessly losing red acceptance. Both **Problems B** and **C** can still accept  if you cut the correct tiles. **Problem B** has the  pair, and **Problem C** has the  pair.

Info

You don't need to maximize acceptance for aka tiles all the time. After all, there's only one of them for each suit. When your hand is already high-scoring on its own, you don't need to consider them. But if your hand could use a little more value, cut accordingly so that you won't have to cut an aka tile when it does come.



When choosing between kanchans, leave the one with more ryanmen upgrades.

When your kanchans have the same amount of ryanmen upgrades and tanyao doesn't seem possible, keep the outer kanchans.

Answers

A: 

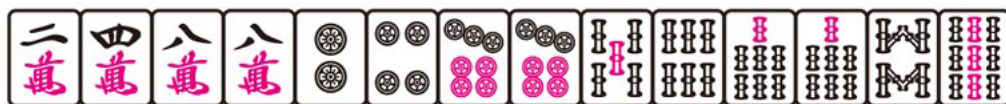
B: 



C: 















Comparing Kanchans (2)



Prob. A





We must choose between  and . The positions of the kanchans are both the same, so we'll compare the two by looking at what happens when we drop a kanchan and then draw a tile that connects to one of our pairs.



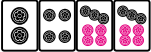
	Drop 	Drop 
Draw 		
Draw 		

The hands we get if we draw  are about the same no matter which kanchan we drop. If we dropped  (top right) and draw  afterward, the hand gets into perfect 1-shanten with a double acceptance on , which is a bit unfavorable.

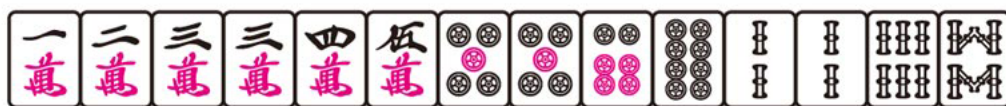
If we dropped  and draw  (bottom left), the hand we get is especially bad. It can't upgrade into perfect 1-shanten so there's a high chance we end up with a bad wait tenpai.







Both choices seem to have its drawbacks depending on which tile we draw afterward. But between the shape overlap that presents itself after two upgrades and the shape overlap that presents itself after only one, we obviously prefer the former.


With this considered, we can say dropping  is better. The simulator backs this up. Dropping  excels in all statistics, including expected value, tenpai rate, and win rate.

Some of you might find it challenging to go through this thought process in your head. My advice is to look for suji tiles.  and  in the pinzu shape  from **Problem A** are suji. The manzu, on the other hand, have no such suji tiles. Try to reduce suji in your hand as much as possible.

Prob. B



We must choose between  and .  does not backfire on us if we cut . This is because  and  are suji.

With this general principle of reducing suji, we can see at a glance that  is the best answer.



Try to reduce suji in your hand as much as possible.

Answers

A:



B:





Lesson 27

Comparing Penchans

All penchans have the same amount of tile acceptance and upgrades, but they can still differ depending on the position of other joints in the hand or dora. More often than not, there will be a good reason to keep one penchan over the other.

Prob. A



This hand has a block surplus. We should drop one of the penchans, but there are two of them to choose from. Take a moment to think about which one you would drop and why.





The correct answer is to drop . There are three main reasons why this is the best move.

1. As the hand progresses there's a chance that we'll end up cutting . In that case, it will be somewhat easier to win if our final wait is because of the suji trap.

2. We can make a ryankan if we keep and draw .

3. One tile of is already being used as the dora indicator, making it harder to draw that tile to stick to our penchan. We're slightly more likely to end up with than , so keeping the penchan increases our chances of winning.

The third reason might not seem like such a big deal, especially because this problem doesn't include any discard piles. But in real life, you'll see many terminal tiles like  and  cut early in the game, which makes this something to consider. It's even more important if you want to build a pon-called hand or chiitoitsu.

This is the same line of thinking that goes into deciding between floating tiles. Say, for instance, it's the early game and you have to cut one of the two floating tiles  and . If neither of them contribute to potential dora acceptance or yaku, you should look to the opponents' discard piles to see if any of the tiles that can stick to these floating tiles (preferably  or ) have already been cut.

Consider the suit of the tile as well. Take note of whether it's a cheap suit (where many tiles of that suit are getting cut), the same suit as the dora (which tends to be harder to win off of), or a suit likely to be called by your right player.

Info

The more mahjong theory you learn, the easier it is to get bogged down with it. Learn to quickly recognize which concepts apply to certain situations, like when to use the five-block method versus the six-block method, or when to consider the opponents' discards.



More often than not, there's a good reason to keep one penchan over the other.

Answers



A:  ()





Complex Joints (1)






Complex joints are just regular joints with an adjunct tile of one of the tiles that comprise it.

	Simple Joint	Complex Joints
Ryanmen		
Kanchan		
Penchan		

Generally, complex joints follow the same hierarchy that simple joints do: ryanmen > kanchan > penchan. But sometimes, this order is reversed when calling is involved.

Let's take a look at the two hands below and compare two complex joints: the complex kanchan  and the complex penchan .

	Hand	Ease of calling	Upgrades
		Okay	Good
		Great!	Bad

The complex kanchan  wins out in terms of upgrades. If you draw  and cut  you get the complex ryanmen  and add four more tiles of acceptance. In contrast, the complex penchan  has very few upgrades.

Note that different complex kanchans also vary in ease of calling and upgrades. The table below compares with .

	Hand	Ease of calling	Upgrades
		Okay	Good
		Good	Okay

is better for calling, and is easier to upgrade.

Drawing for the , the splits the shape into two blocks, and . So if your hand already had enough blocks, now you can drop one of them.

Keep these comparisons in mind when you’re choosing the strongest blocks in your hand. Also, note that ease of calling is directly related to how easy it is to win off of that shape. Shapes that are easy to call will also be easier to win off of. This is why you should prefer ease of calling over upgrades for called hands.

Info

When choosing complex joints in actual games, you should also consider defense. When an opponent forces you to fold, you want shapes that are safe to discard. Tiles that are closer to the outside are generally safer. That means ease of calling is also directly related to defense.



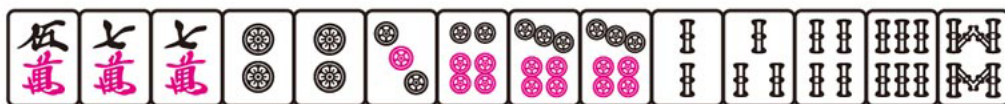
Two factors used to choose complex joints are their ease of calling and upgrades.


Prefer ease of calling over upgrades when building a called hand.




Complex Joints (2)


Prob. A



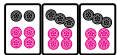


This hand has a lot of complex joints and no excess tiles, which is actually quite typical. I imagine many players could take one look at this problem and know that the correct answer is , but they probably couldn't tell you why.



We get five blocks and no excess tiles after properly splitting up the hand. Unfortunately, the only complete block is the run , so we'll have to make three melds and one head with the remaining four blocks.

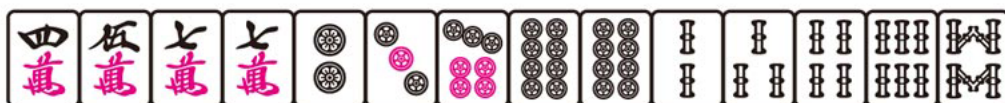
 is a weak joint, but if we got rid of it, we'd only have four blocks.

 is a kanchan with an adjunct tile, and  and  are both ryanmens with adjunct tiles. None of them are excess tiles, but we have to choose *something* to cut.

The best course of action to take in this case is to leave the adjunct tile for the weak joints and cut the adjunct tile for the strong joints. In other words, "fix the strong and leave the weak".

Both  and  are strong ryanmen joints with an adjunct tile, but we should cut  to make it easier to get tanyao.

Prob. B



Be careful not to miss the most obvious detail of this hand. Split it into blocks first, and you'll see that there's a block surplus.



Go for the perfect 1-shanten and cut .

You should only fix the strong joint and keep the weak joint's adjunct tile for hands with five blocks. We treat adjunct tiles differently depending on the number of blocks we have in our hand.

1. With six blocks (a block surplus), keep the strongest five blocks and cut the weakest one.

2. With five blocks, maintain a good balance in the hand by keeping the adjunct tile for the weak joint.



Fix the strong joint and keep the adjunct tile for the weak joint.

Cut the weakest block if you have a block surplus. Maintain balance in the hand by keeping the adjunct tile for the weak joint only when you have five blocks.

Answers

A:

B:

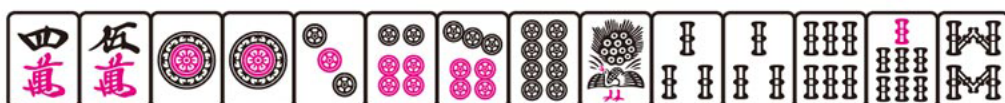


Lesson 30

Complex Joints (3)

How do we choose between two weak complex joints?

Prob. A



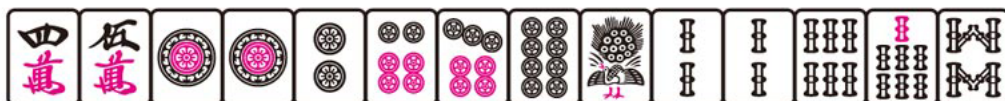
This hand has two complete melds and is at 1-shanten. We should cut a tile from one of the complex joints, or .

Ideally, we want to make it easier to get tanyao while at the same time maintaining two heads. Think about the hand we end up with if we draw the upgrade or .

Cut . If we draw , we can drop the pair and go for tanpin. If we draw , we'll have the perfect 1-shanten shown below.



Prob. B



This hand is similar to **Problem A**. What should we cut this time?

The correct answer is, again, . If we draw or , we can drop the pair and go for tanyao. If we draw , we end up with a furiten joint, but we'll still have the following perfect 1-shanten.



Some of you are probably worried about the furiten joint, so look at it this way.

Of our total acceptance $\text{三萬}-\text{六萬}$, 四萬 , 五萬 , and 二南 ; any of the tiles 二南 , $\text{四萬}-\text{五萬}$, and 二南 would get rid of the furiten. So even if we draw $\text{三萬}-\text{六萬}$ first and get to tenpai, we could take the shanpon wait on 二南 and 二南 , and we wouldn't be furiten. So there's no need to worry about it with this hand.

Prob. C



Tanyao doesn't seem possible with this hand, and it's very likely that the manzu will complete first. Assume that we're going to riichi and take the shanpon wait if that happens. Sakigiri 二南 .

Depending on the discard piles, cutting 四萬 or 五萬 are also good moves.

Deciding between weak shape complex joints comes up very often ingame. You'll need to consider factors like available tiles, how to get an upgrade to tanyao, and whether you'll be able to take an early riichi or not.

Also, learn to stop worrying too much about furiten. When a hand has complex joints, the furiten will most likely resolve itself by the time you get to tenpai.



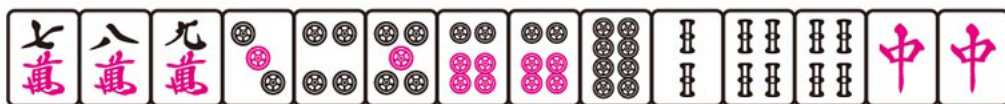
Choose weak shape complex joints by considering available tiles, tanyao, and wait.



Lesson 31

Three-Tile Weak Joint Theory (1)

Prob. A



This hand has three heads, so undoing the or pair yields the broadest tile acceptance. But we want to try and wait on , so let's choose to cut either or .

The two choices may seem the same at first glance, but they can deliver vastly different results. Think about what we'd end up with after drawing .



If we cut and drew , we'd have this hand after cutting .



If we cut and drew , we'd have this hand after cutting .

We get a much cleaner upgrade by cutting . It lets us tidy up the pinzu into a sanmenchan while leaving an adjunct tile for the weak joint in the souzu.

isn't the only tile cutting is good for. Drawing or gives us a ryanmen, and even though drawing makes us furiten, we'll have a three-sided wait.

The main idea of three-tile weak joint theory is to keep the weak blocks in three-tile shapes. “Weak” here doesn’t just refer to joints like the kanchan, but also the joints’ potential upgrades. and are both relatively weak joints, but since the pinzu joint is connected to it has more upgrades than the souzu. That means we should leave the adjunct tile in the weaker souzu joint alone. This is one of those things that doesn’t seem important at first, but actually has a significant effect on the hand later on.

Prob. B



This one’s a bit easier to understand than **Problem A**. Let’s cut either or to make it easier to wait on the yakuhai.

The shanpon we end up with if we keep and draw is clearly inferior to three-sided wait we’ll get if we keep and draw . The correct answer is . Notice that we’re maintaining the three tiles in the weak souzu shape.

Three-tile weak joint theory feeds into a broader theory that says it is optimal to maintain an odd number of tiles across suits. Both **Problem A** and **B** decrease the number of pinzu from six tiles to five tiles.



Keep the weak blocks in your hand in three-tile shapes.

Answers

A:



B:





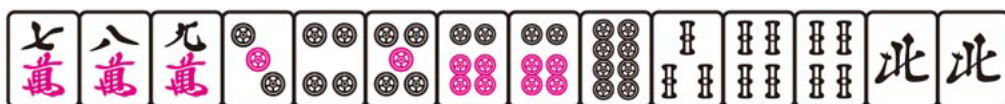
Lesson 32

Three-Tile Weak Joint Theory (2)

You might have already known that joints work well in three-tile shapes, but you should also be familiar with how to use the technique correctly.

“Weak joints” is specified in the name of the theory because many players don’t know which joints to keep at three tiles.

Prob. A







This problem looks like **Problem A** from the last lesson, but the joint in the souzu is now a complex ryanmen. Cut and keep the adjunct tile in the pinzu joint. This gives us the broadest tile acceptance and focuses it on the weak shape in the pinzu. Just like we learned *Complex Joints (2)*, we fix the strong joint and keep the adjunct tile of the weak joint.

Prob. B



There are four tiles in the manzu, two in the pinzu, five in the souzu, three honor tiles, and no excess tiles. Cut a tile from the manzu to make it a three-tile joint. If we cut we can pon or , and we won’t end up with any excess tiles. But if we cut and pon , we’ll have to drop either or , which leaves us with an excess tile.





Don't make the mistake of turning the manzu into a ryankan by cutting . Even though it trims the manzu down to three tiles, compared to  or , you lose four tiles of acceptance (and you lose your only head if you draw ).

When you're using three-tile weak joint theory, prioritize maximizing acceptance at 1-shanten (1-shanten peak theory) and maintaining two heads at 1-shanten (two-head theory).

Make sure you're not misusing three-tile weak joint theory. It is only valid when your hand has no floating tiles or excess tiles. If it does, focus on getting rid of those tiles.

Prob. C



Keep it simple and cut . The hand has a block surplus even if we cut , so it might be tempting to get rid of the weak shapes by cutting . But we prefer the chance of completing a meld over the chance of forming a strong joint with .



Strong joints are good enough with two tiles. Leave the three tiles for weak joints.

Prioritize 1-shanten peak theory and two-head theory over three-tile weak joint theory.

Answers

A: 

B: 

C: 

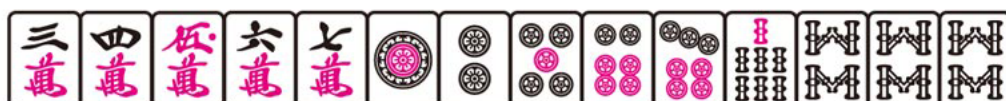
Dropping Joints (1): Order




In what order should we cut tiles from joints like kanchans and penchans?






Prob. A








Prob. B



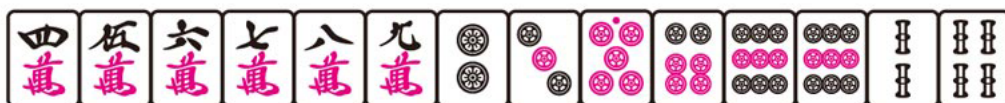
In **Problem A**, we'd typically cut from the inner tile , since the hand doesn't have any weaker joints to drop, even if we form a furiten ryanmen () or a kanchan ()

Some people might disagree and say, “if we start from  and draw , we could go for a riichi tanpin hand and drop the  pair.” But we can’t upgrade the hand to tanyao without passing up on a riichi, so it doesn’t really matter whether we have a  head and a  head. Even if the hand becomes pinfu, tanyao is unlikely.

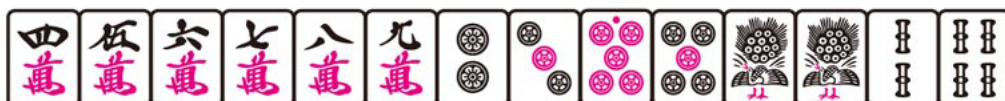
For **Problem B**, cut from the outer tile . Although it's riskier, we could form a head with  and easily go for tanyao.

Both the manzu and the souzu are good shapes, so there's only a small chance we draw  before we get to tenpai. Even so, it's still better to cut from . The probability of drawing  to get to tenpai, assuming no upgrades, is 12% (3/25).

Prob. C



Prob. D



Problem C: Cut . Some of you might have chosen to cut first, but keeping it gives us a chance to get rid of the pinzu double acceptance, go for 4-5-6 sanshoku, and accept . If the souzu upgrades to a ryanmen, we'll drop the joint.

Problem D: Cut . Since the hand can accept even without , this choice gives us the broadest tile acceptance, at 16 tiles in 5 kinds. Compared to that, we miss out on four tiles of acceptance by cutting or . Even if we draw , we'll get pinfu anyway, so we should start cutting from .

Info

Is the discard pile a “window into the hand”?

Say you discard a kanchan from → or a penchan from → .

How do you think your opponents would react to this? They would probably note that you cut from the inner tile since this is an odd way of discarding. Many players will try to guess the speed of your hand or the shapes you have from this information.

Nowadays, some players cut tiles from a joint in the opposite order of these general principles on purpose to misdirect opponents. It's hard to say if this actually has any effect on the game, but it's something to keep in mind.

Point

Think about risk versus reward when cutting tiles from a joint in a certain order.

Answers

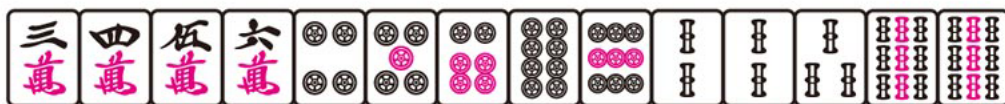




Lesson 34

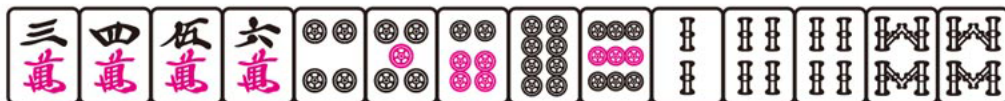
Dropping Joints (2): Timing

Prob. A



We might be able to make two melds from the yonrenkei in the manzu. If we get another tile to build upon the manzu, we'll drop . But drawing gets us to tenpai immediately, so it's better to keep in the hand for now. Fix the ryanmen with and go for pinfu. Even if the pair became a set, we'd have a bad wait hand with no yaku.




Prob. B

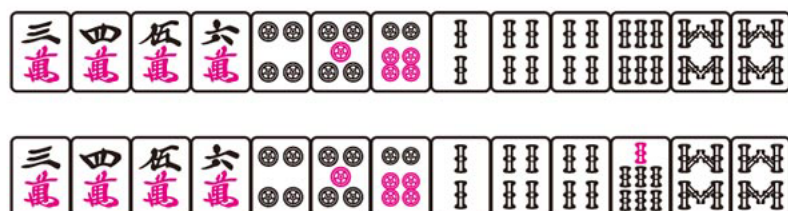


The best answer for this one depends on turn number. Unlike in **Problem A**, we should drop the penchan and revert to 2-shanten. By doing this, we can get better waits and we have the option to call with tanyao.

Cutting , , , or gets us to 1-shanten, but all the possible tenpais from there are no-yaku bad waits. Nobody wants such a crappy 1-shanten!

Start by cutting from . Even though drawing gives us a potential furiten, it's a three-sided wait.

Don't make the mistake of cutting from the souzu. If you keep both pairs, one of them could complete into a set. Also, drawing  or  makes a strong shape in the souzu if you keep the complex kanchan .



Dropping a penchan takes two turns. So, especially with today's lightning-quick mahjong rounds, you need to consider if the value you're adding to your hand is actually worth the two turns it takes to drop the joint. Keep in mind that two turns in the late-game and two turns in the early-game have vastly different implications.

When you're not sure whether to go for pinfu or tanyao, you should stick with tanyao in most cases. It gives you more fu if the hand is closed, and you'll always have the option to open your hand.

Your judgment with these kinds of problems will get better with experience. Try to remember what you learned in this chapter and take it at your own pace.



Don't take crappy 1-shantens, revert your hand back to 2-shanten if you can.

Make sure the value you're adding is worth the two turns to drop the joint.



Chapter 4

Complex Shapes

complex (adjective) [kəm-pləks']

1. having many parts or aspects
that are usually interrelated.

from Merriam-Webster





Lesson 35

Ryankan (1): Valuation

A ryankan is a shape that's sort of like two kanchans stuck together, as in .

Both ryanmens and ryankans have the same tile acceptance, at least before you get to tenpai. That's why some players consider ryankans to be almost as good as ryanmens. But I think the two shapes add completely different values to a hand.



The above hand is in 1-shanten with a ryanmen and a ryankan. If the ryankan completes first, the ryanmen will be our wait, and we get pinfu. But if the ryanmen completes first, we'll end up with a kanchan wait and a yaku-less hand.

Hopefully, you can see from this example that the ryankan is simply not as good as the ryanmen. If we were ranking these shapes on a tier list, I'd place ryankans a whole tier below them. But of course, ryankans do have perks like setting suji traps, so there is some ambiguousness.

Vocab

Tier List: usually used in video game culture to rank aspects of the game (such as playable characters) based on how powerful they are. We can apply this to shapes in mahjong too.

Here's a simple way of putting it for those of you into trading card games.



The “cost” refers to the number of tiles used to create the joint. A ryanmen uses two tiles, and a ryankan uses three. Even though it’s just a one-tile difference, you could keep a safe tile or an adjunct tile in a complex joint with that free space. Also, notice that the ryankan’s attack (acceptance) is halved if it’s kept until tenpai. Pretty big dealbreaker, huh?



Think of ryankans as a tier below ryanmens.

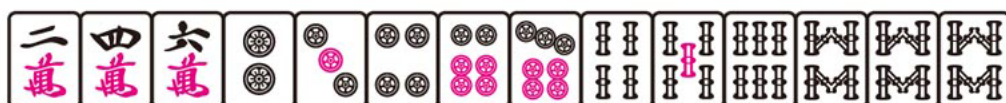


Lesson 36

Ryankan (2)

When should we keep ryankans and when should we drop them?

Prob. A



We can either keep the ryankan by cutting or fix the kanchan by cutting or . But as you can see from the tile acceptances listed below, cutting is not very good.

Cut ... 7 kinds, 24 tiles

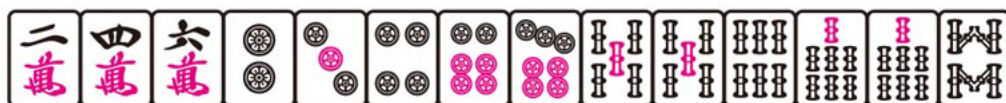
Cut ... 7 kinds, 24 tiles



Cut ... 4 kinds, 16 tiles

So which kanchan should we make the ryankan into?

It depends on the players we're up against and how the game is going. If we cut , we set a suji trap on the . But in today's mahjong scene, fewer players choose to go with this trap. We might instead cut to accept or draw for a ryanmen upgrade, which is the more modern style of play. Then, if we draw the upgrades , , or , we'll get rid of the manzu.

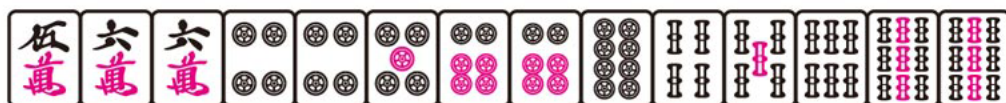
Prob. B

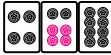


With this hand, it's better to keep the ryankan. Cut  to fix  as the head and maximize tile acceptance.

We shouldn't keep the  acceptance since we could lose tanyao. We'd lose our head if it completes anyway.

Prob. C



Pick out the , and you'll see we have a  ryankan.



Cut  and go for pinfu sanshoku iipeikou.



Learn when to keep ryankans and when to drop them.

Answers

A:  ()

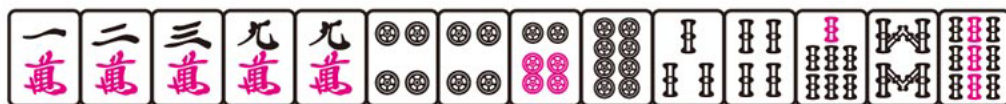
B: 



C: 















Ryankan (3)




Prob. A










The ryankan in the pinzu has an adjunct tile. Cutting  or  both give us the same tile acceptance. Let's think about which one we should choose.




Cutting  lets us accept , , and - (4 kinds, 16 tiles). Then if the pinzu complete first, we'll have a ryanmen wait, and we can claim pinfu. But if the souzu complete first, we can only wait on a kanchan with a yaku-less hand.


Cutting  lets us accept , , , and - (5 kinds, 16 tiles). However, we only get pinfu if we draw . If the souzu complete first, we can choose between a shabo wait or a kanchan wait.

Don't forget to consider the upgrades. Cutting  or  both lead to a shape with a  ryanmen upgrade.

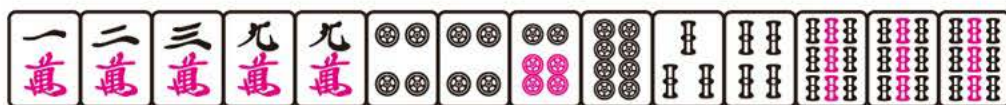
If we cut  and draw , we'll start dropping the  kanchan by cutting . Cutting  and drawing  would also lead to us cutting .





Cutting  from **Problem A** might seem better because it could lead to a perfect 1-shanten. But if either of the  or  heads become a closed set, we'll lose pinfu. For that reason, I don't think the perfect 1-shanten is that much of a benefit.

With all of this considered, our best choice is to maximize our chances of pinfu and cut . We prefer this direct upgrade in points over a small chance to upgrade the hand's shape.

Prob. B



Pinfu is highly unlikely with the the closed set of , so let's change up our strategy. A single closed set of terminals and honor tiles yields 8 fu, so any other closed set gives the hand a **fu boost**. Cut  to make it easier to build a closed set.

Vocab

Fu Boost: Most non-pinfu hands only score 2-10 extra fu on top of the basic 20 fu (or 30 fu for a closed ron). Because of fu rounding, we say that any hand that gets over 10 extra fu, when it otherwise wouldn't have, has gotten a fu boost. This awards more points.



Prioritize a direct upgrade in points over a small chance to upgrade the hand's shape.

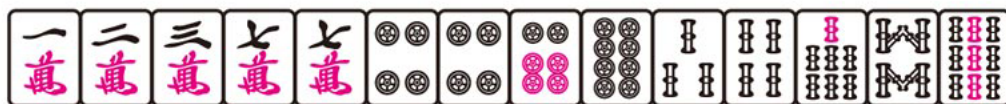
When 8 fu is already guaranteed, considering going for a fu boost.



Lesson 38

Ryankan (4)

Prob. A




The only thing different about this hand from the last lesson's problem is that the head is now a head. Since the head is now an inner tile, it can upgrade into a strong joint. So if we cut , drawing any of , , or puts us in perfect 1-shanten. But if the souzu complete first, we'll have to choose between bad waits: a shanpon or a kanchan.

However, only the eight tiles of - (2 kinds) complete the ryanmen in the souzu. Statistically, we're more likely to draw the 12 tiles of , , or (3 kinds) for the upgrade to perfect 1-shanten.

Cutting is a blunder. Upgrades for the manzu pair won't increase acceptance by very much, and you're likely to end up with a bad wait.

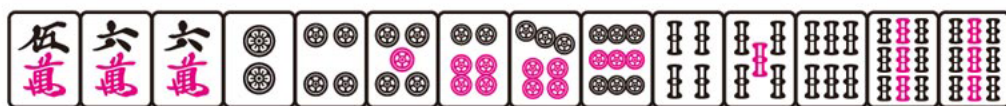
Either choice of or gives us the same amount of acceptance toward the - ryanmen tenpai, but they differ by a lot in terms of upgrades.



The correct answer is to cut and maintain the two heads.





In the last lesson, I mentioned that it's better to prioritize a direct upgrade over a small chance to upgrade the hand's shape. But with the  head, it's now much easier to upgrade the hand.

Some of you may be experiencing a bit of déjà vu right about now. Well, that's because we've actually been over this type of problem before. Remember *Two-Head Theory (3)*? We learned that between a kanchan and two heads, you should usually keep the two heads. As it turns out, this line of thinking also applies to ryankans.

Prob. B



The shape in the pinzu is called a **long ryankan**. It's sort of like a regular ryankan, but with an extended middle section. This one in particular accepts  and .

Cutting , , or  all yield the same tile acceptance, but the correct answer is to cut  and go for pinfu sanshoku.



When you have a head of inner tiles, drop the ryankan and maintain two heads.

Answers

A:



B:

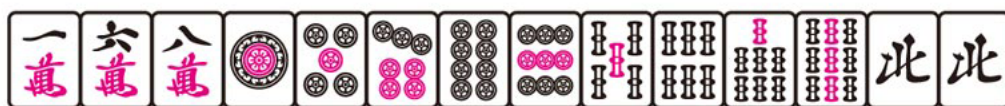













Lesson 39


Ryankan (5): Ryankan Frames

Prob. A



Our choices are , , and ; but we should keep  since it lets us form a ryanmen by drawing . Let's compare  and  by looking at the shapes we get when we draw  and .

- ▶ Keeping  and drawing  gives us the kanchan .
- ▶ Keeping  and drawing  gives us the ryankan .

Ryankans are better than regular kanchans, so  is the correct answer. Two-tile shapes like these with three spaces in between them are called **ryankan frames**.

Prob. B





Our choices are  and .

- ▶ Keeping  and drawing  gives us the shape .
- ▶ Keeping  and drawing  gives us the ryankan .



The ryankan might seem like the better shape since it accepts two kinds of tiles, but think about what you would cut if you managed to draw it.



Considering we want to pon  or , it's hard to say what the best move here is.





On the other hand, say you cut  and draw .



The best move then is to cut , which keeps the hand open to ryanmen upgrades in the manzu. A ryankan wouldn't do much for our hand in **Problem B**, so the correct answer is to cut .

Prob. C



This is the same as **Problem B**, but with the run in the manzu moved away from the . Even with this change,  is still the correct answer. Like in **Problem B**, the  ryankan is hard to keep in the hand, which makes the regular  kanchan easier to use. Even if we're left with the kanchan as our wait at tenpai, there's a chance it could upgrade to a ryanmen.

Leaving the ryankan frames alone is a solid strategy, but it's not always ideal. Remember that ryankans often lead to a bad wait, which is especially true for called hands.



It's not always good to keep ryankan frames.

Answers

A: 

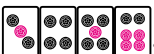




B: 

C: 

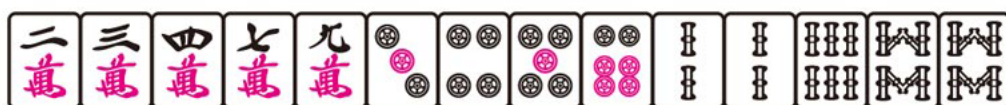


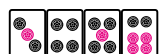


Lesson 40

Yonrenkei (1)




A yonrenkei is a complex shape made up of four sequential tiles, as in . Cutting one tile from the shape forms a single meld, but the strength of the yonrenkei comes from its ability to **stick** tiles. For example, drawing any of  or  for the above yonrenkei gives you one run and one ryanmen, and the  and  give you a sanmenchan. Out of all the four-tile complex shapes, the yonrenkei is the strongest.

Prob. A



We can see the  yonrenkei as comprising two blocks,  and .



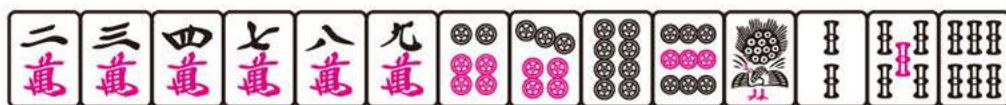
Now that we've split the pinzu into two blocks, we have a block surplus. Although it increases our shanten, we should drop the  kanchan and look to upgrade the pinzu. Start cutting from the outer tile  to keep the hand open to the  upgrade.

Prob. B



Yonrenkeis get exceptionally weaker when they're at the edge. Technically, is a yonrenkei, but in practice, it's not much better than a floating . Only and form a ryanmen joint, which is only half of the normal yonrenkei's acceptance, and neither of them lead to a sanmenchan. Drawing gives us one run and a pair, but the hand already has enough heads. Cut inward with .

Prob. C



This hand has an edge yonrenkei and is in headless 1-shanten. Dropping the penchan is the best move. If we draw first, the hand gets pinfu, and if we draw first, we'll end up with a double tanki wait.

It doesn't matter that much whether we cut or first. If you want to inch the hand inward, start with . If you want to cut safely, start with . Since this hand probably won't get tanyao, I recommend cutting first.

Vocab

Stick: to connect a newly drawn tile to a floating tile or shape and form a new joint. A "sticky 1-shanten" is a type of 1-shanten where you can get to tenpai by sticking a tile.



Inner yonrenkeis can be split into two blocks.

Yonrenkeis at the edge are often not much better than a floating inner tile.

Answers

A:

B:

C:



Lesson 41

Yonrenkei (2)

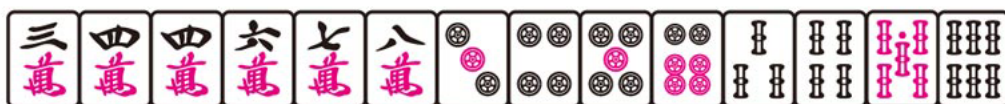
Now let's consider the different kinds of upgrades yonrenkeis have.

All tiles from to are effective tiles for the yonrenkei . In other words, a hand with this yonrenkei can accept every pinzu tile except for .


- ▶ and (2 kinds, 8 tiles) form a sanmenchan (~29%)
- ▶ and (2 kinds, 6 tiles) form a run and a ryanmen (~21%)
- ▶ and (2 kinds, 8 tiles) form a run and a kanchan (~29%)
- ▶ and (2 kinds, 6 tiles) form a run and a pair (~21%)

The percentage for each tile group above is calculated from the number of tiles for that type of upgrade out of the total upgrades (28 tiles). This only applies to yonrenkeis, so use these values to get an idea of how useful the shape is. If you're looking to stick a tile to the yonrenkei, note that there's a 50% chance that it forms a strong joint.







Prob. A



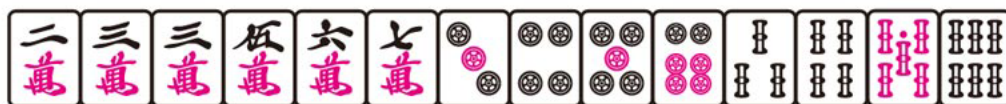
This hand is in 1-shanten with two yonrenkeis. Cutting yields the highest acceptance at 58 tiles in 17 kinds, but remember, we shouldn't decide what to cut based solely on acceptance. If we cut the hand will almost always get to tenpai by sticking a tile. I say "almost always" since could become a closed set, which would lead to a double tanki wait. We'd end up with a run and a ryanmen (or a three-sided wait) about 50% of the time, but since



we have to account for drawing , the chance of a good wait is actually slightly lower than 50%. Put simply, if we keep the two yonrenkeis, we'll have bad waits like kanchans or shanpons at tenpai more than 50% of the time.

Let's keep the complex ryanmen  so we can use it as both a potential head or ryanmen.

Instead, we'll choose between , ,  and . Out of these four options, only  preserves both 3-4-5 sanshoku and red acceptance. Cut .

Prob. B



This one is like **Problem A**, but with the manzu shifted a bit. If we need a good wait, the best move is to cut a tile from the souzu, the same as before. If we need points, we don't want to lose tanyao by drawing , so the best move is to fix the head and cut . This yields the highest expected value and compromises between tenpai rate and score.



Keeping yonrenkeis at 1-shanten only nets you a good wait about 50% of the time.

Answers

A:



B:



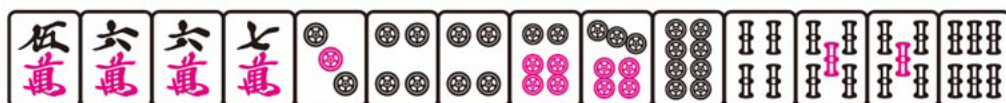


Nakabukure (1)

A **nakabukure** is a complex shape that looks like a run with an extra middle tile, as in .

This is a strong shape that is easy to form ryanmens with. The only tile that doesn't make a ryanmen when you stick it to the nakabukure is the middle tile. It's especially strong in pinfu hands, which require ryanmen waits.

Prob. A




This hand has two nakabukures. The three choices below all yield around the same tile acceptance.

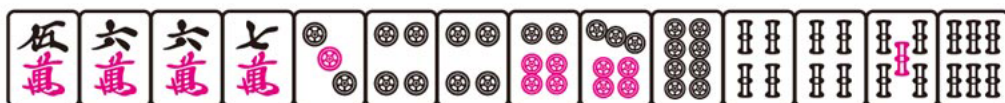
Cut  ...  11 kinds,
34 tiles

Cut  ...  10 kinds,
33 tiles

Cut  ...  10 kinds,
33 tiles

Fixing the head when your hand has two nakabukures is generally the best move because you have a very high chance of getting a good shape tenpai. Cut .

Prob. B



This hand only has one nakabukure, but the correct answer is still . It's hard to make heads with nakabukures, so we should fix the head and leave the souzu alone. This way, drawing either or puts us in tenpai with a ryanmen in the souzu. Just remember that it's usually okay to fix the head when your hand has a nakabukure. As for the tile acceptances, cutting yields 38 tiles in 12 kinds, yields 37 tiles in 11 kinds, and yields 33 tiles in 10 kinds. is our best choice, but and aren't all that bad either.

In actual games, you can choose not to fix the head to go for tanyao or other yaku. If you keep in mind that nakabukures complement fixing the head, it'll be easier to tackle these problems. Even though both of the problems in this lesson are 1-shanten, it's completely fine to fix a head with hands even further away from tenpai as long as you have a nakabukure.

You can also choose to keep tiles that are useful for dora. For example, if **Problem B** has the dora in the souzu, we might even consider . Even though this move lowers our chances of a good shape tenpai, it's covered by the additional han, which doubles our points.



Fixing the head when your hand has two nakabukures is generally the best move.

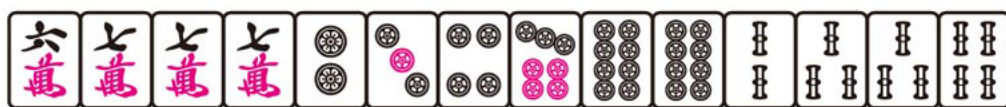
It's usually okay to fix the head when your hand has a nakabukure.










Nakabukure (2)


In the last lesson, we learned that it's usually okay to fix the head when you have a nakabukure. However, you shouldn't do this when your hand has **unstable heads**.

Prob. A



Cutting  yields 34 tiles in 11 kinds,  yields 33 tiles in 10 kinds, and  yields 21 tiles in 6 kinds.




All of our joints are in strong complex shapes, and the strongest is . If we're left with this shape at tenpai, we'll be waiting on the 3 kinds - and , so we should try to keep it.

The head in the  shape changes depending on how you split it into blocks.


▶  +  The head is .



▶  +  The head is .

Until the shape completes, we don't know where the head will be, so we say that the hand has an unstable head. When the head's position is not clear, leave blocks with strong joints alone. It might be difficult to understand why, but once you study the problem a bit, it'll become clear. We want to be

This means our best move is to cut , which does away with the nakabukure. The answer might not be obvious at first, but the trick is to realize that you are most likely to get to tenpai by completing the manzu. If you cut  instead,  becomes an idle tile.

Prob. B



 is a double dora, so keep it in the hand. The correct answer is to cut , which makes the most of the dora.

As long as you remember that nakabukures don't go well with unstable heads, these problems are easy to solve.

The opposite of an “unstable head” is a “stable head”. Your hand has a stable head when you know where the head is likely to be.

A stable head might sound better than an unstable head, but this isn't necessarily true. In fact, a lot of the time it's easier to go for higher-scoring hands when you have an unstable head.

Many advanced WWYDs are based around unstable heads. Take the time to learn this concept at your own pace.



Nakabukures don't go well with unstable heads.



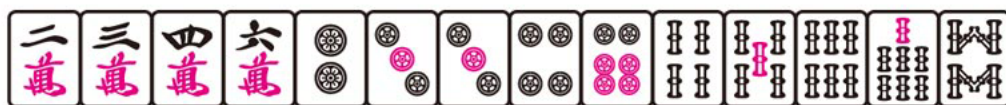
Lesson 44

Nakabukure (3)

There's one last thing that you should know about nakabukures: what to do with tiles one space away from them, like .

You can also think of this shape as + , a ryankan and a pair.

Prob. A



Our choices are , , and . The correct answer is .

Cut ... 6 kinds, 20 tiles

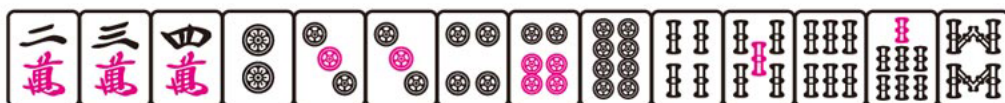
Cut ... 5 kinds, 17 tiles

Cut ... 5 kinds, 16 tiles

The -- acceptance is shared by all three choices, and drawing another tile of the other kinds to form the head also puts us in tenpai. But only cutting keeps the additional acceptance.

Then if we draw - or , we can take an even wider acceptance at 1-shanten by cutting .

Prob. B

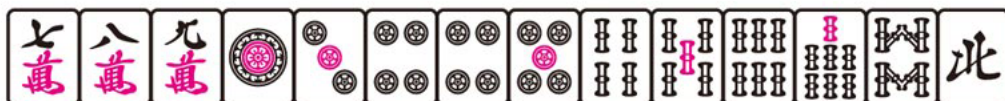


Cutting yields 33 tiles in 10 kinds, yields 20 tiles in 6 kinds, and yields 19 tiles in 5 kinds.

wins out in terms of pure tile acceptance, but the correct answer is actually . If we cut , there's a high chance we'll end up with a bad wait tenpai. yields a higher good wait tenpai rate and allows us to take in upgrades. However, as the round progresses into the late-game, tile acceptance becomes more important, and we should consider .

Cutting and keeping the ryankan also leads to a high bad wait tenpai rate. This should only be done to go for yaku or dora.

Prob. C



You might be tempted to keep for a tanki wait, but it's better to keep the nakabukure and the tile one space away. Not only does it give us a broader acceptance, it also lets us go for pinfu. If the souzu complete first and no one else has riichi'd, taking the first riichi with for the tanki wait is still pretty good.

Point

A nakabukure with a tile one space away is powerful when your hand is headless.

Answers

A:

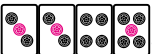
B:


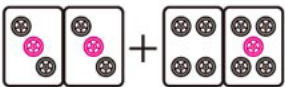
C:



Lesson 45

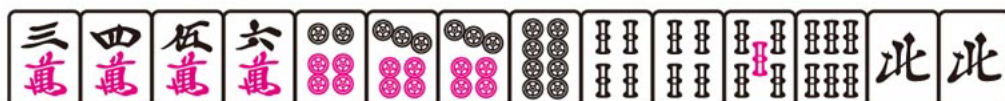
Aryanmen (1)





An aryanmen is a complex shape that looks like a run with an extra outer tile, as in . There are two ways to split them into blocks:

- ▶  Run + Floating Tile
- ▶  Head + Ryanmen

Following the yonrenkei and the nakabukure, this is the third four-tile complex shape that we'll be learning about. These three shapes are very common in WWYD problems.

Prob. A



Which tile would you cut, , , or ? We already have three melds, and we just need a joint (preferably a ryanmen) to get to tenpai. The yonrenkei and nakabukure accept 4 kinds of tiles to make a ryanmen, while the aryanmen only accepts 2. The correct answer is to do away with the aryanmen, the weakest shape of the bunch, by cutting .

This example is no special case. When you're stumped by a WWYD that has complex shapes like yonrenkeis, nakabukures, and aryanmens, remember that most of the time, the correct answer is to cut the aryanmen.

I want to stress that “when in doubt, cutting the ayanmen is almost always correct.”

The “almost always correct” part might seem like I’m making a half-baked guess, but it’s rooted in some solid reasoning.

First, you need to understand that ayanmens are weak shapes. There are several reasons why:

1. You’re just as likely to form a kanchan as you are a ryanmen by sticking a tile to the ayanmen.
2. When the ayanmen is left at tenpai, your wait is, at most, only six tiles.
3. If there is another potential head, you might end up with a shanpon wait.

Since ayanmens are so weak, even if the optimal move is to keep the ayanmen, cutting it by mistake isn’t such a big deal. And difficult WWYD problems usually follow a pattern: they force the player to decide between weak shapes, which include the ayanmen.

This idea that you can’t blunder by cutting an ayanmen even when there is a better choice lends us a lot of leeway for our judgment. Once you’re done with this book, hopefully you won’t get stumped as often!



When in doubt, cutting the ayanmen is almost always correct.



Lesson 46

Aryanmen (2)


Prob. A








Most people probably choose , but the correct answer is .

Cut  ...        6 kinds, 20 tiles

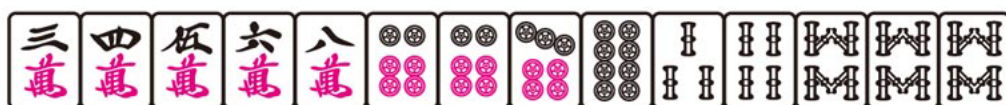
Cut  ...       6 kinds, 19 tiles


Cut  ...      5 kinds, 12 tiles

Cut  for the broadest acceptance.  contributes to both the  and  acceptance in this hand, making it a very powerful tile. It's very easy to overlook this  kanchan draw, so be careful.

This choice also guarantees tanyao at tenpai, so it wins out in terms of scoring as well.

Prob. B



The answer to this one is also to cut the ayanmen with .  is important since it gives us  and  acceptance. Drawing - also puts us in tenpai.

As you can see from these two examples, when your head is unstable, you should take note of which tiles you could draw to make one and advance shanten.

A lot of the time, the difficult problems with an ayanmen are hands without a head (not counting the pair in the ayanmen). Get into the habit of checking whether or not you will have a better way to make the head when your hand has the ayanmen.

In actual games, if you have no head, you might even consider keeping floating tiles over an ayanmen if you're confident there are still some tiles of that kind in the wall. Even if you don't draw another one of them to make your head, it could be relatively easier to win off of as a tanki wait.

The same goes for live dora tiles. Since they're so dangerous to cut, you're better off keeping them in your hand. You could look to make a head with them and cut the ayanmen instead.



Get into the habit of checking whether or not you will have a better way to make the head when your hand has an ayanmen and no head.

Answers

A:  B: 





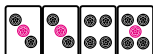
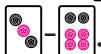
Comparing Waits (1)

● Ryanmen vs. Aryanmen (1)

We know that the aryanmen is a weak shape, but exactly how weak is it? We can get an idea by comparing it to the regular ryanmen.

While the ryanmen can wait on eight tiles at most, the aryanmen can only wait on six. Because of this, you could logically conclude that aryanmens are three-fourths as strong as regular ryanmens. But that's not quite right.

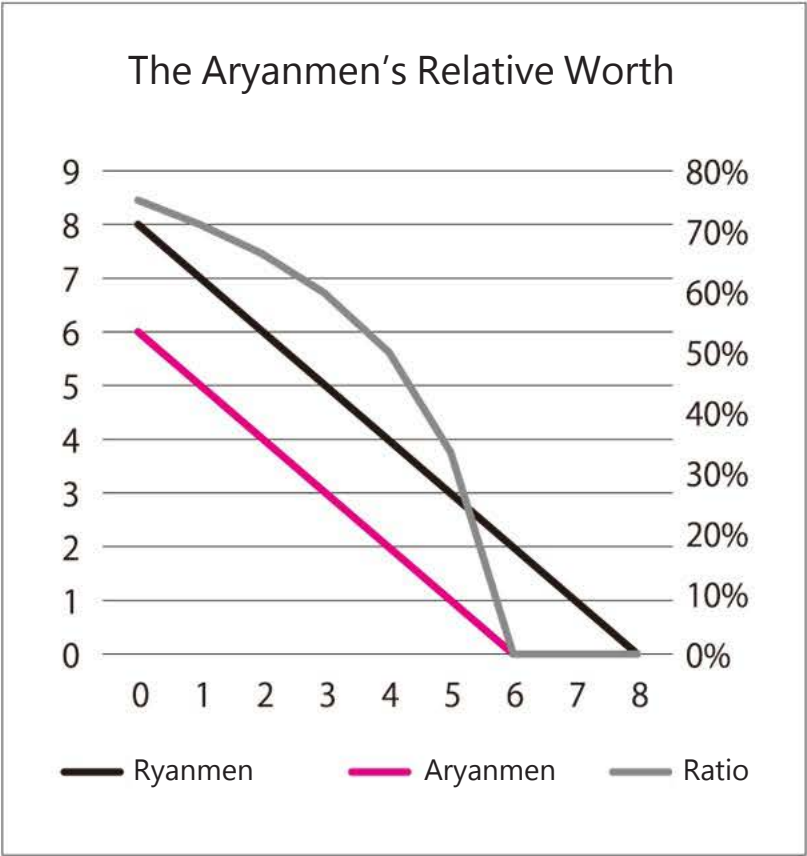
If you've ever watched a pro mahjong game, you might've heard the commentators count the remaining tiles in the wall for a player's waits. Sometimes, they'll even do it for multiple players. This only possible because, as spectators, they can see every player's hand.

Let's say, for example, we're watching a game and two players riichi. One of them has a  ryanmen and is waiting on . The other has a  aryanmen and is waiting on . If no one has any of these wait tiles in their hand, and they're all in the wall, the commentators might say it's "eight tiles vs. six tiles".



Of course, it's rare for no one to have any of the wait tiles. Let's be more realistic and say that two tiles from both players' waits are in some other player's hand. Then, it's "six tiles vs. four tiles", and the aryanmen is only two-thirds as strong as the ryanmen. If four tiles from both players' waits are being used, it's "four tiles vs. two tiles", and the aryanmen is half as strong as the ryanmen.

The maximum acceptance of the aryanmen is only two tiles less than the ryanmen, but its relative worth plummets when you factor in realistic tile counts.



The left axis is the remaining tiles of each wait.
The bottom axis is the number of tiles of each wait being used.
The right axis is the ratio of tiles in the aryanmen wait to those in the ryanmen wait (aryanmen wait/ryanmen wait).



The maximum acceptance of the aryanmen is three-fourths that of the ryanmen, but its relative worth plummets when you factor in realistic tile counts.



Lesson 48

Comparing Waits (2)

● Ryanmen vs. Aryanmen (2)

Sometimes, we prefer an aryanmen over a regular ryanmen. Take, for example, two players at tenpai. One has a ryanmen with a wait, and the other has a aryanmen with a wait. This time, neither of them riichi.



Both of them keep their tenpai, but nobody deals in, and neither of them manage to draw their waits. On the last turn, they both draw dangerous tiles.



Both players want to avoid cutting this dangerous tile. But for the player with the ryanmen, this is impossible to do without breaking their tenpai and paying the no-tenpai penalty. On the other hand, the player with the aryanmen can simply cut and switch to a tanki wait on the dangerous tile. Of course, this is assuming the is safe to cut. Many players build aryanmen waits for tiles that are easy to win off of, which is directly related to how safe the tile is.

● Ryanmen vs. Kanchan

In the last lesson, we learned that aryanmens are only, at most, three-fourths as strong as the ryanmen. Even then, its relative value can plummet. Some of you may be wondering if this also happens to kanchans when we compare them to ryanmens.

The kanchan's maximum acceptance is four tiles, only half of the

ryanmen's maximum acceptance. You might say, then, that kanchans are only half as strong as ryanmens. Applying the same logic we used in the last lesson, the kanchan's relative value to the ryanmen seems like it drops even faster than that of the aryanmen. But when we look at the win rate of these waits with real-life statistics, it's obvious that something doesn't add up. Kanchan waits are better than expected.

The main reason this happens has to do with suji. The two kinds of tiles that ryanmens wait on are suji to each other. Kanchans, however, only wait on one kind of tile. This means that tiles that are safe to ryanmen waits can be dangerous to kanchan waits. For example, if an opponent knows you're in tenpai and sees  in your discard pile, they might choose to cut , which is not possible for you to win off of if you have a ryanmen wait. It is possible, however, for you to call ron if you have a kanchan wait instead. This is called a **suji trap**. Kanchans that have them are more likely to win than kanchans that don't.

Hopefully, you now have an idea of why you shouldn't compare waits based purely on their tile acceptance. Once you've played enough games, you'll get a feel for how good each of these waits actually are.

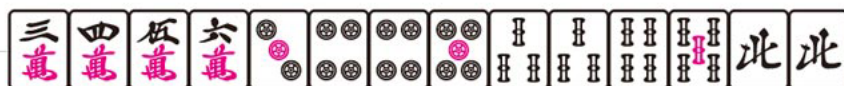
Everything I've said about aryanmens in these last two lessons also applies to double tanki waits. Likewise, what I've said about kanchans in this lesson holds true for penchans as well.



It's easier to keep tenpai with aryanmens in the late-game.

Don't compare waits based purely on their tile acceptance.

Sumire's Notes



Tiles That Stick to Yonrenkeis, Nakabukures, and Aryanmens

	All Kinds	Ryanmen	Kanchan	Shanpon
Yonrenkei	~	· · ·	·	·
Nakabukure	~	· · ·	-	
Aryanmen	~	·	·	* ·

This table only applies if there is at least one head in your hand.

*Irregular 3-sided wait.

Overview of Complex Shapes

	Acceptance	Ryanmen Rate	Fixing the Head	Unstable Heads
Yonrenkei	Great!	Good	Good	Great!
Nakabukure	Okay	Great!	Great!	Bad
Aryanmen	Good	Okay	Okay	Good

This table only lists three of the many complex shapes.



■ Yonrenkei

A really strong shape! Might even become a 3-sided wait.

Yonrenkeis at the edge are kinda bad (except for making heads)

■ Nakabukure

Can't make kanchans, so this one works well with pinfu (*' ω `*)

Also works well with fixing the head, especially when you have two nakabukures!

■ Aryanmen

Overall a pretty weak shape.

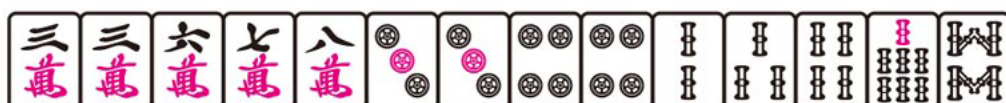
When in doubt, cut the aryanmen!










Adjacent Pairs

Two pairs lined up, as in , are called **adjacent pairs**.

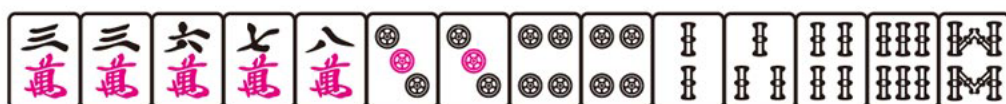
Prob. A










This hand is close to pinfu, so cut one of  or . The resulting shape can make either a set or a run.

As for which tile to cut first, we should go with  since it has two suji (- and -), which is usually more dangerous. In a real game, you could also keep the tile which you think is more likely to become a set.

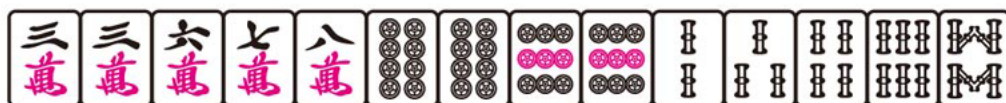
Prob. B



This is like **Problem A**, but the ryanmen joint has been replaced with a kanchan joint. Even though cutting  or  gives us the most acceptance, we should cut  instead since we don't want to throw away our chance at a tanpin iipeikou.

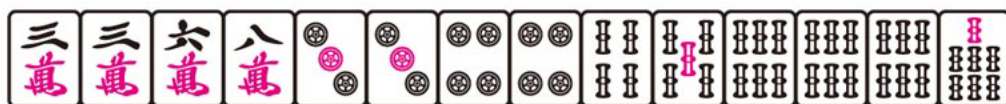
Cutting  and  yield 16 tiles, while  and  yield 14 tiles. We lose two tiles of acceptance, but this is more than made up for by the points we could get. This kind of problem comes up a lot in actual games.

Prob. C



Adjacent pairs at the edge are much, much weaker. Making two melds with is very unlikely, so let's turn it into a three-tile shape. If we wanted to form an aryanmen with , we'd cut . If we wanted to go for tanyao, we'd cut . For this hand, even if we cut and draw , it's better to take the tenpai than to keep the aryanmen. If not for the pair, tanyao would be secured in this hand, so cut .

Prob. D



This hand has a chance at becoming chiitoitsu. Keep the pairs in your hand intact and cut . Drawing still puts us in perfect 1-shanten for a meld hand, with a chance at tanpin iipeikou.

We can think of inner adjacent pairs like as two ryanmens stacked on top of each other. is a double acceptance, but we get a big return if we manage to draw it, so it's usually better to keep these adjacent pairs over weak joints.



Think of inner adjacent pairs as two ryanmens.

Answers

A:

B:


C:

D:

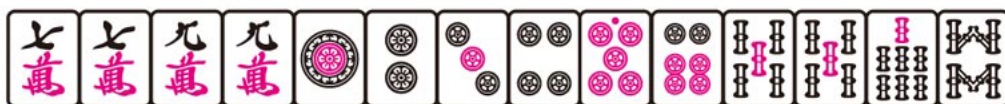




Lesson 50




Detached Pairs (1)

Pairs with a space in between them, as in , are called **detached pairs**.

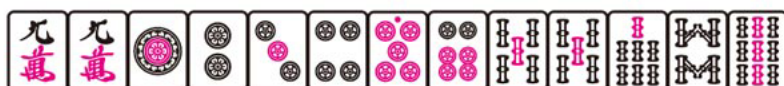
Prob. A




This hand is at 1-shanten with three heads. Let's cut from the detached pairs  to make it a three-tile shape. Drawing  for a pinfu riichi is ideal.




It doesn't make much of a difference whether you cut  or  first, but according to my simulations,  wins out ever so slightly, probably because of upgrades for tanyao and perfect 1-shanten. In actual games, however, don't just discard whatever gives you more upgrades; consider the context of the game.

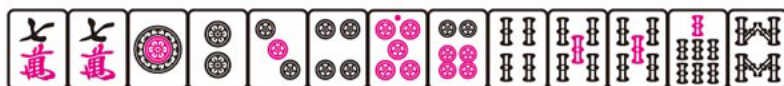
If all you need is a cheap shabo wait riichi hand, start with .



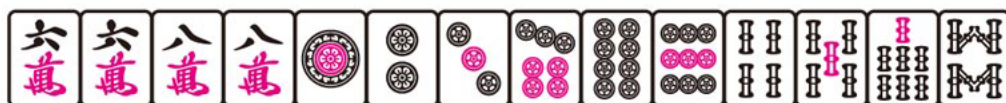
If you want a perfect 1-shanten, start with .



Cutting  also keeps your hand open to upgrades to the manzu even after an upgrade to the souzu head. For example, after drawing , we can still take the  upgrade if it comes.



Prob. B



Cutting either 6W or 8W puts us at pinfu 1-shanten.

Since we have a chance at 7-8-9 sanshoku, let's make 6W our head. For now, just cut 8W and make the manzu into a three-tile shape. If we draw 7P-8P-9P later, we'll take the riichi. But if we draw 7W first, we'll drop the 7P joint and go for pinfu sanshoku.

Prob. C



Instead of making the detached pairs into a three-tile shape, drop the 7P-1M kanchan.

Even though keeping this kanchan and drawing 8P immediately puts us in pinfu tenpai, we should prioritize the upgrades we get if we draw 6W, 7W, or 8W.

Generally, you should keep the hand open to the 7P ryanmen upgrade and start cutting with 1M.



Make detached pairs into three-tile shapes.

Answers

A: 9W (7W) B: 8W C: 1M

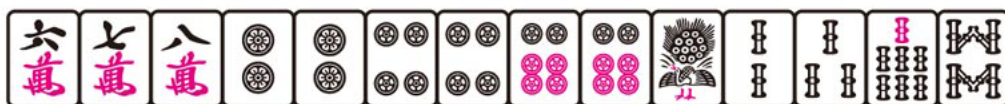







Lesson 51

Detached Pairs (2)

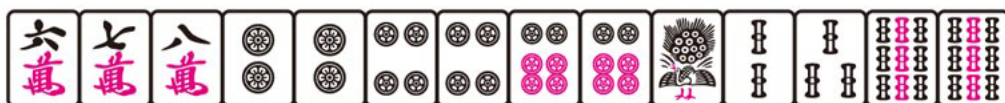
Detached pairs can also come in threes, like .





Prob. A







If we cut the middle tile , the pinzu accept four kinds of tiles at 1-shanten: , , , and . The best tile to cut from triple detached pairs is usually the middle tile.

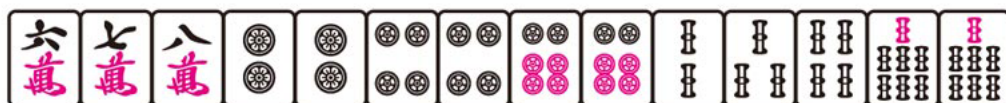
Prob. B



Here, I've replaced the souzu ryanmen joint in **Problem A** with a pair. No matter which of the four pairs we cut (, , , or ), our acceptance will be the same.

We *could* cut  like in **Problem A**, but  yields a higher expected value since it inches the hand inward, and we have a chance at iipeikou if we draw  or .

Prob. C



This is like **Problem B**, but with the outer parts shifted inward. Going for iipeikou by cutting still yields the highest expected value, but in actual games, you may also consider because:

1. The souzu pair could upgrade to a complex ryanmen.
2. You can call and go for an open tanyao hand.

You have more of a reason to cut if you're planning to call anyway. In that case, there's no point in going for iipeikou since it is a closed yaku.

Some older mahjong strategy books tell us to always cut the middle tile from shapes like and to leave all the other joints alone, but I recommend not rushing it.

Sometimes, triple detached pairs is a useful shape. For example, drawing gives us . From this shape, we can cut for the potential ryankan .



The best tile to cut from triple detached pairs like is usually the middle tile, but there's no need to rush it.

Answers

A:

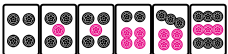



B:

C: ()




Lesson 52

Ryanmenkanchan (1)

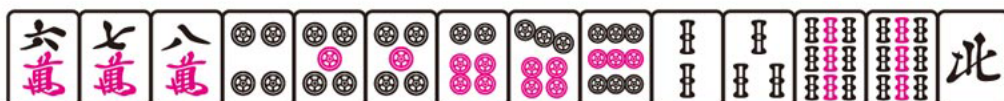
Shapes like  are called **ryanmenkanchans**. Just as the name suggests, this shape is a combination of a ryanmen and a kanchan. They accept three kinds of tiles, and the one above accepts - and .

▶  +  Here's the ryanmen...

▶  +  the kanchan...

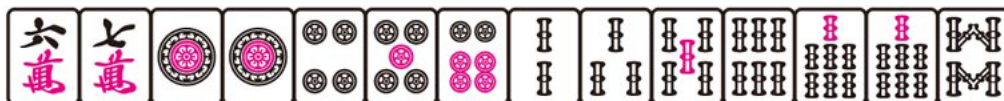
▶  +  and if we split it like this, we can see a ryankan too.



Prob. A



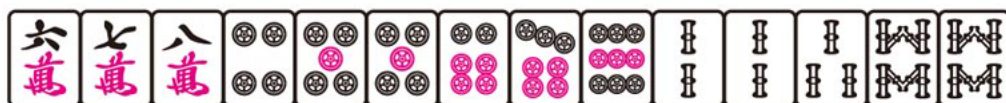
Cut . If we cut , we lose four tiles of acceptance.

Prob. B



This one's a classic WWYD. The trick here is to recognize the ryanmenkanchan in the souzu and cut  for an acceptance of 19 tiles in 5 kinds. Cutting  only yields 16 tiles in 3 kinds.

Prob. C



This is **Problem A**, but with the head shifted in and no excess tile.

Cut ... 6 kinds, 19 tiles

Cut ... 5 kinds, 19 tiles

The tile acceptance for either choice is the same. We must choose between cutting which lets us accept and for the tanyao tenpai, and cutting which secures pinfu with a ryanmenkanchan.

Go with tanyao instead of pinfu and cut . Calling ron with a the pinfu hand is 30 fu, and calling tsumo is 20 fu. In contrast, calling ron with the tanyao hand is 40 fu, and calling tsumo is 30 fu. You can expect more points with the tanyao hand in this case, and it leaves the option to call open.

Ryanmenkanchans are incredibly easy to miss if you're a beginner, so be careful. Keep your eyes peeled for this shape and take your time to get used to recognizing them.



Memorize the ryanmenkanchan and learn to recognize them in your hand.





Lesson 53

Ryanmenkanchan (2)

Prob. A


[East Player, Turn 11]




This problem is from *Nikaidou Aki's WWYD Collection* (Mynavi Publishing Corporation). The answer in that book is , but some people would probably choose  instead. What do you think is the better choice?


Cut  ...       6 kinds, 19 tiles

Cut  ...      5 kinds, 19 tiles

Cutting  keeps the opportunity for iipeikou open, which gives us a shot at a riichi pinfu iipeikou 1-dora hand. However, we might also end up with a riichi 1-dora hand if we don't get the right draws.


Cutting  gets rid of the potential iipeikou, but ensures that we'll at the very least have a riichi pinfu 1-dora hand.





Essentially, this is a choice between a guaranteed low-scoring hand and an unguaranteed high-scoring hand. Both choices yield the same acceptance and have their own benefits and drawbacks, so it's hard to say which is better. But we can compare the two by looking at their expected values.


As it turns out, cutting  wins in terms of expected value. Actually, we could've predicted this because of how the scoring



system in mahjong works. All scores up to mangan-level are doubled when you go up by one han, and halved when you go down by one han. When two choices like this have the same tile acceptance, it is, on average, better to go with the potentially higher-scoring choice.

Let me break it down for you. I'll use **Problem A** as an example.

Cutting  - Pinfu is guaranteed. If you riichi and ron someone, you get at least 5800 points.

Cutting  - Under the same win conditions, through maximum tile acceptance, you have a 4/19 chance (when drawing  or ) of losing pinfu for 3900 points, and a 3/19 chance (when drawing ) of adding iipeikou for 12000 points. The remaining 12/19 chance goes to a pinfu hand for 5800 points.

Compared to the point loss when you lose pinfu, the point gain when you add iipeikou is much bigger. This makes cutting  a low-risk, high-reward choice.

Even though cutting  gives us the higher expected value, it is not always the best choice in actual games. If you're in a situation where it's too risky to riichi, cutting  ensures you'll always have the pinfu yaku if you go dama. And if you're just trying to upset the placements and 5800 points is just enough, you should go with this safer option.

Info

Some rulesets use mangan rounding, so that 30 fu 4 han hands are counted as mangans instead of 7700 (non-dealer) or 11600 (dealer).



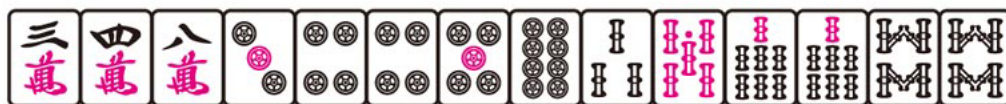
On average, it is better to go with the potentially higher-scoring choice.








Lesson 54

Ryanmenkanchan (3)

Prob. A

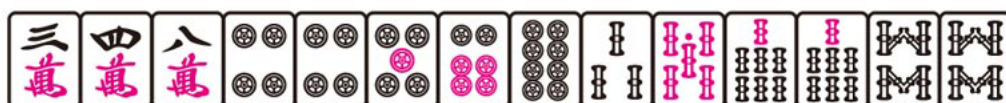







We must choose between  and . At first glance, they look the same, but think about what happens if we draw .



If we cut  and draw , we get a  ryanmenkanchan in the pinzu and a shot at 3-4-5 sanshoku.



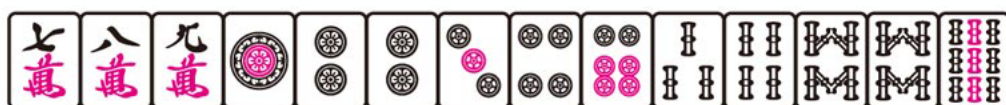
Prob. B








Like in **Problem A**, cut . Drawing  gives us a ryanmenkanchan in the pinzu. We might also draw , which gives us the shape ; or , which lets us make a sanmenchan.

Both  and  look hard to use, but their difference becomes evident once you think about what you might draw next.

Prob. C



This ryanmenkanchan in the pinzu is squashed against the edge and only accepts  and . Even then, drawing one of these first will give us a pinfu hand, so cutting  to maximize pinzu acceptance is the conventional move.

In this lesson, we looked at a few easy-to-miss shapes that can turn into ryanmenkanchans. The one in **Problem B** can also turn into a sanmenchan, so it's even more important to keep . It's no use if you only notice this after you draw !

Learning to look ahead and anticipate draws will help you avoid furiten and develop your hands faster. When choosing between two unwanted tiles, always try to look for a reason to keep one over the other.



Look out for shapes that could become ryanmenkanchans.

Look for reasons to keep one unwanted tile over another.

Answers

A: 

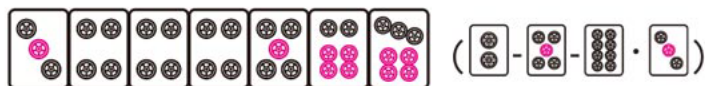
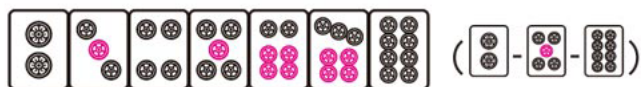
B: 

C: 



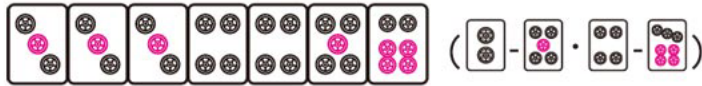
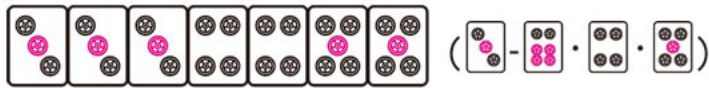
Lesson 55

Compound Waits in 7-Tile Shapes



Here are the most important compound wait shapes, with their waits in parentheses.

Some compound wait shapes use all four tiles of the same kind, but those are much rarer.



Suji Theory for Compound Waits

If your first reaction to seeing all those compound waits on the last page was, “There’s no way I’m memorizing all of this,” then, good news! You don’t have to. It’s possible to figure out your compound waits just by understanding their basic principles.

When runs connect with the wait shape, additional waits may be added. Here are a few examples:

● Wait Extensions

Diagram illustrating the distributive property of multiplication over addition using dot cards. The equation shown is: $(2 \times 3 + 1 \times 3) + 2 \times 3 = 2 \times (3 + 3) + 1 \times 3 = 2 \times 6 + 1 \times 3 = 12 + 3 = 15$.

Diagram illustrating the distributive property of multiplication over addition using dot cards. It shows 2 groups of 2 dots plus 3 groups of 2 dots, which equals 2 groups of 4 dots plus 1 group of 2 dots.

Diagram illustrating the distributive property of multiplication over addition using base ten blocks. On the left, a box with 2 tens blocks is multiplied by a box with 2 tens blocks, plus a box with 2 tens blocks. This is shown to be equal to a box with 2 tens blocks multiplied by a box with 4 tens blocks. The blocks are represented by circles with dots, and the boxes are labeled with numbers.


Diagram illustrating the distributive property of multiplication over addition using base ten blocks. The equation shown is:

$$3 \times (1 \text{ ten rod} + 2 \text{ one units}) + 2 \times (1 \text{ ten rod} + 3 \text{ one units}) = 5 \times (1 \text{ ten rod} + 5 \text{ one units})$$

The diagram shows 3 groups of (1 ten rod + 2 one units) plus 2 groups of (1 ten rod + 3 one units), which equals 5 groups of (1 ten rod + 5 one units).

Diagram illustrating the distributive property of multiplication over addition using ten-frames. The first part shows 2 ten-frames with 1 dot each, followed by a plus sign and 3 ten-frames with 2 dots each, then an arrow pointing to the result. The result is 5 ten-frames with 2 dots each. The second part shows 2 ten-frames with 1 dot each, followed by a plus sign and 3 ten-frames with 2 dots each, then an arrow pointing to the result. The result is 5 ten-frames with 2 dots each.

Diagram illustrating the distributive property of multiplication over addition using ten-frames. The equation shown is $(20 + 10) \times 2 = 20 \times 2 + 10 \times 2$. The first part shows two groups of (2 tens + 1 ten) = 3 tens, which equals 30. The second part shows 2 groups of 2 tens (4 tens) plus 2 groups of 1 ten (2 tens), which also equals 6 tens or 60. The final result is 60.

► 

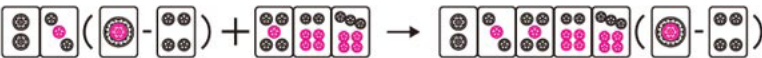
Waits can be extended in a few different ways, but they all have one thing in common: the added wait is *suji* to the original wait.

For waits extensions to occur, the end tile of the run must either (1) overlap with the end tile of the shape, or (2) touch the end tile of the shape.

When you've found one wait in a compound wait, check to see whether or not its suji are also waits.

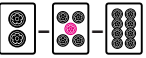
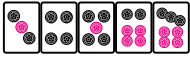


Keep in mind that runs connected to the wait shape don't always extend waits in all cases. Take a look at these next few examples:

● Cases where runs don't extend waits


►  (The run isn't even connected here)

► 

► 

In the simplest extensions, ryanmens become sanmenchans, tankis become double tankis, and double tankis become triple tankis. That means the most basic shapes with a  wait are  and . But sometimes, you'll find weird shapes like  that combine ryanmens and tankis. That's why I don't recommend thinking about the shapes in the final wait. It's a lot easier to just remember that suji can become additional waits when the shape is connected to a run.

Info

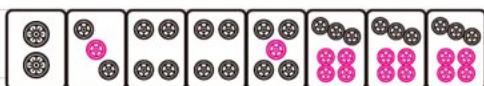
It's completely possible to analyze the waits of  through shapes alone, but it's pretty difficult to do when you're going for hands like chinitsu and you've got other tiles mixed in there.

Point

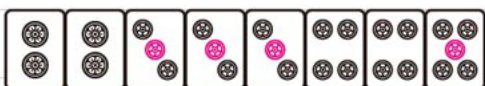
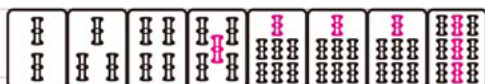
Suji can become additional waits when your shape is connected to a run.

Sumire's Notes

Cut the tile that will give you the most waits.



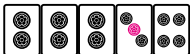

- A: (- -) B: (- -) C: (- -)
- D: (- -) E: (- - -) F: (- - - -)



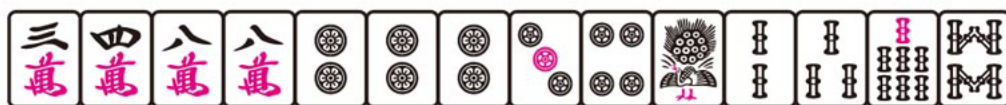
G: (10 vertical bars - 10 vertical bars - 10 vertical bars) H: 七萬 (四萬 - 伍萬 - 六萬) I: (2 dots - 2 dots - 2 dots with a red center - 2 dots with a red center)
J: (10 vertical bars - 10 vertical bars - 10 vertical bars) K: 伍萬 (六萬 - 七萬 - 八萬 - 九萬) L: (1 dot - 2 dots - 2 dots with a red center - 2 dots with a red center)










Entotsu

Entotsu literally means “chimney” in Japanese. We call shapes like  entotsus, possibly because the three duplicate tiles in the shape seem like they’re stacked up. When there’s any head in the hand with an entotsu, as in  it makes a seven-tile shape called the **entotsu wait**.

Prob. A

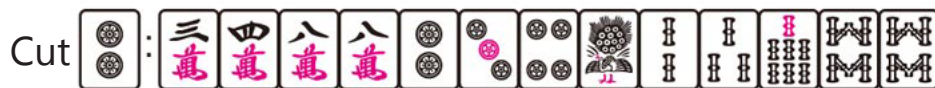


Cutting , ,  and  all yield 16 tiles of acceptance, but only  and  bring us closer to a pinfu hand. Which of these two do you think is better?

Regardless of which tile we cut, we can take a perfect 1-shanten if we draw an adjunct tile for one of the ryanmen joints. For example, if we draw  and cut the remaining tile of the pair, we’ll end up with one of the following hands, depending on which one we chose.





...               7 kinds, 23 tiles



...               6 kinds, 20 tiles

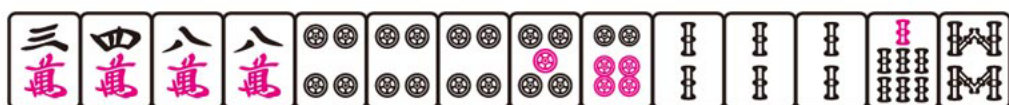
There is no immediate difference in acceptance between the two choices. It only appears once we draw our next tile.









After we drop the  pair, drawing  boosts our acceptance even more.







From this hand, we might even get iipeikou. Our acceptance is now at 24 tiles in 8 kinds. As you can see, entotsus are very handy shapes, so keep them for as long as possible.

Prob. B



This time, we have a shot at tanyao, but not pinfu. Cutting , ,  and  all give us the highest acceptance at 16 tiles, but dropping either of the ryanmen joints   or   yields 15 tiles, only one tile less.

Dropping   guarantees tanyao, and if we're lucky, we can even get sanankou. Iipeikou is also possible if we draw the right pinzu, so I'd say this more than makes up for the one tile loss in acceptance. All pinzu from  ~  will be effective tiles.



Entotsus are very handy shapes, so keep them for as long as possible.

Answers

A:  

B:   



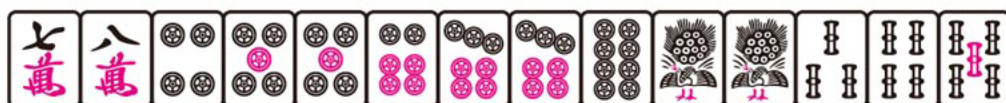
Lesson 58

Potential Iipeikou (1)

Unlike tanyao, iipeikou only involves a portion of the entire hand. And since it's only one han, it's not something you should go out of your way to make. We generally favor a good wait tenpai over iipeikou, and we'll only keep a potential iipeikou if it can complete naturally.

In the next problems, assume we are not hard-pressed for points.

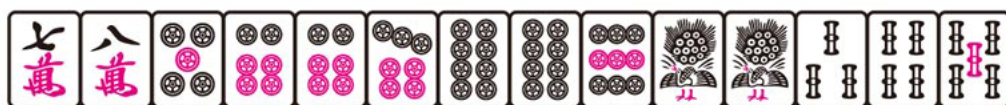
Prob. A



Cut yields 23 tiles, yields 23 tiles, yields 19 tiles, and yields 19 tiles.

We've already secured two melds and a head in the manzu and souzu, so we need to make two melds in the pinzu. Prioritize the good wait over iipeikou and trim the pinzu down into a sanmenchan. That means we need to cut either or . We still want to be able to accept if it comes, though, so start with .

Prob. B

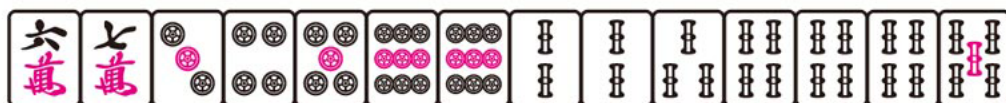


Cut yields 19 tiles, yields 19 tiles, yields 19 tiles, and yields 15 tiles.

Here, I've shifted the pinzu shape from **Problem A** to the edge.

A three-sided wait is impossible now, and we only have the ryanmen joint with acceptance. Cutting lets us accept for tenpai, and drawing completes iipeikou.

Prob. C



Cut . yields 22 tiles, yields 20 tiles, and yields 19 tiles.

Cut for the broadest acceptance. If you need points or you don't want to riichi, you could also consider .

yields the second broadest acceptance, but it lowers our chances at pinfu. Prioritize the - ryanmen acceptance over iipeikou.

Prob. D



Cut . yields 19 tiles, yields 18 tiles, and yields 16 tiles.

Here, I've shifted the souzu shape from **Problem C** to the edge. Now yields the broadest acceptance, and this choice still lets us complete iipeikou if we draw .



Prioritize pinfu and good wait tenpais over iipeikou.

Answers

A:

B:

C:

D:

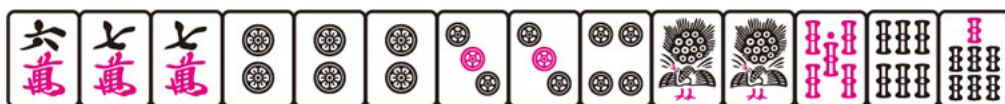


Lesson 59

Potential Iipeikou (2)

In this lesson, we'll look at some more potential iipeikou shapes. Again, assume we're not hard-pressed for points in these next problems.

Prob. A



Cut yields 24 tiles, yields 19 tiles, yields 18 tiles, and yields 17 tiles.

Some people try to force iipeikou by cutting . But remember, tile acceptance is our priority, and yields the most acceptance. Notice that if we leave the pinzu alone, all pinzu from ~ will put us in tenpai.


Cutting maximizes our chance of pinfu and iipeikou, but it's not worth the five tile loss in acceptance. We'd also lose the acceptance toward tenpai.







Prob. B



Cut yields 20 tiles, yields 17 tiles, yields 15 tiles, yields 14 tiles, and yields 14 tiles.

Here, I've shifted the pinzu shape from **Problem A** to the edge.




Cutting  is even better now since it has a higher relative tile acceptance.



If you get to tenpai by completing the manzu, the typical move is to riichi with  on the three-sided entotsu wait (- and , seven tiles of acceptance). Forcing iipeikou by waiting on  instead doesn't look too bad at first, but since you're already using one tile of  in your hand, you're waiting on only three tiles. Compared to the seven tiles of the entotsu wait, you lose four tiles of acceptance and end up with less than half of what you could've gone with. You also drastically lower your chances of ippatsu and tsumo. It isn't worth the one additional han.

Prob. C



Cut .  yields 23 tiles,  yields 20 tiles,  yields 20 tiles, and  yields 16 tiles.

Here, I've made the souzu head in **Problem B** into a ryanmen joint. Since the penchan acceptance of  is so weak, prioritize pinfu and the good wait tenpai. Use two-head theory and treat  and  as your potential heads.

Cutting  is a mistake. Even if you complete iipeikou by drawing , you won't have a head.

As you can see, forcing iipeikou at the edge is risky and doesn't benefit us very much.



Don't force iipeikou at the edge.

Answers

A: 

B: 

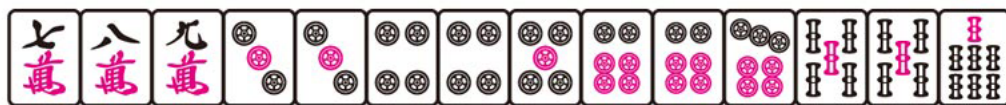
C: 



Lesson 60

Potential Iipeikou (3)

Prob. A



Cut . yields 21 tiles, yields 19 tiles, yields 19 tiles, yields 17 tiles, and yields 15 tiles.

Cutting yields the broadest acceptance but leads to too many bad wait tenpais. If we cut and draw -, we get a three-sided wait, and most other draws lead to a ryanmen wait.

Prob. B





Cut . yields 17 tiles, yields 15 tiles, yields 15 tiles, yields 15 tiles, and yields 13 tiles.

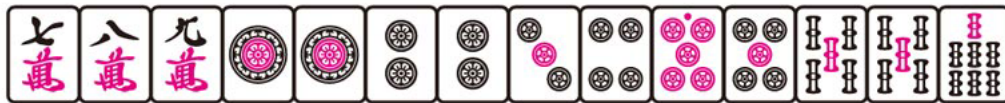
Here, I've shifted the pinzu shape from **Problem A** to the edge. The pinzu are a bit difficult to parse, but once you realize that drawing , , and lets us wait on -, cutting is a no-brainer.










Cutting yields the broadest acceptance but, again, leads to too many bad wait tenpais.

Cutting isn't that bad, but we lose our potential iipeikou and it lowers our expected value. It's true that you shouldn't go out of your way to make iipeikou, but and both yield the same





acceptance. The chance of a ryanmen tenpai when cutting  is 53% (8/15) and for  it's 47% (7/15), but this isn't enough to justify ruining our chance at iipeikou.

Prob. C



Cut .  yields 17 tiles,  yields 15 tiles, and  yields 13 tiles. You might be tempted to cut  again, but here we should cut  and let the shapes develop for a bit. Then, if we draw  we can trim down the pinzu and go for pinfu. If we're lucky and draw  immediately, we can go for a riichi pinfu iipeikou hand. If the  isn't in the problem, though, this is more of a toss-up.



From this hand, there's almost no difference in expected value between cutting  and . This is probably because you can draw  to get to tenpai after cutting .

Keep in mind that when you're playing with red fives, sometimes, you can justify a move because of red acceptance or because you want to keep them in your hand.



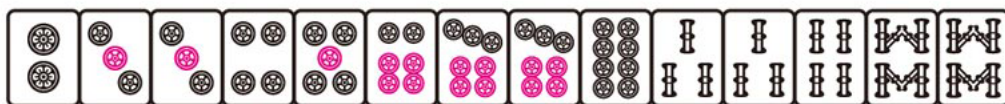
Get a sense of the balance between keeping and disposing of potential iipeikou.



Lesson 61

Wings (1): Nine-Tile Shape

Prob. A



Cutting yields 22 tiles, yields 19 tiles, yields 19 tiles, and yields 18 tiles.

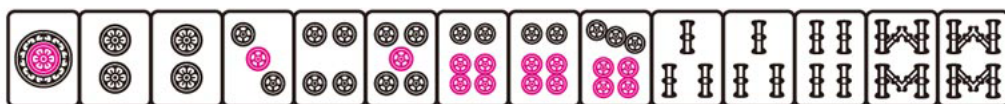
The shape in the pinzu is symmetric, and it looks like a bird spreading its wings in an abstract sense, so we call them “wings”. You can also think of this shape as a with two nakabukures on either side.

Cutting yields the most acceptance and guarantees pinfu.

- ▶ + + + + + + + + + + + + + + Here's the - acceptance...
- ▶ + + + + + + + + + + + and the - acceptance.

It's hard to catch in-game if you don't know about it, so if you do, you get points for style!

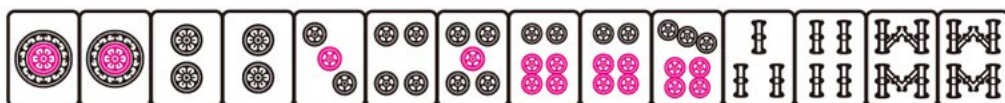
Prob. B



Cutting yields 19 tiles, yields 18 tiles, yields 15 tiles, and yields 14 tiles.

The wing in the pinzu from **Problem A** is now at the edge. The shape is still symmetric, but its acceptance is not. Even so, the correct answer is still . Drawing gets us to pinfu tenpai.

Prob. C



Cutting yields 19 tiles, yields 18 tiles, and yields 15 tiles.

Cutting has the highest expected value since all of our acceptance, including the gets us to pinfu tenpai. Depending on what we draw next, we could go for tanyao too.

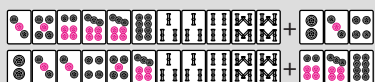
Don't cut and try to force iipeikou. Pinfu is also worth one han and is much easier to get.

Wings aren't absolutely necessary to master to become a better mahjong player per se, but mastery of wings is definitely a sign of a strong mahjong player. At the very least, they'd certainly find it easier to pick out the acceptance in **Problems B** and **C**. Wings are good for practicing complex shapes in general, so it's useful to know what they accept.

Info

Are wings are just fancy ryanmenkanchans?

The two hands below are from Problem A, with melds picked out.



Look familiar? That's right, wings are actually just ryanmenkanchans in disguise. Hopefully, this helps you see their acceptance even when they're all squashed up against the edge.

Point

Study shapes so that you get good at picking out their subtle acceptances.

Answers

A:

B:

C:



Lesson 62

Wings (2): Eight-Tile Shape

Prob. A

[Turn 4]



Cutting yields 32 tiles, yields 32 tiles, yields 26 tiles, and yields 26 tiles.

The shape in the pinzu is a wing like the one we saw in the last lesson, but this time it's made from eight tiles. You can think of it as two adjacent nakabukures.

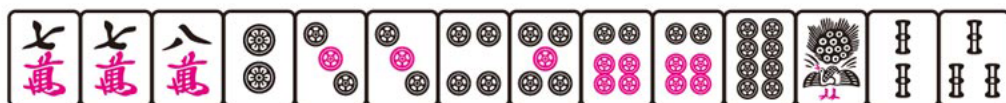
Cutting or yields the most acceptance, but if the manzu completes afterward, we'll have a bad wait. Let's cut or instead. We'll compare the two by looking at their expected values and final waits.



Cutting leads to a hand described in *Utahime Obaka Miiko* as the **super perfect 1-shanten** since it always leads to pinfu. and turn into unstable heads; either one of them could be the head of the hand.

Cutting fixes the head so that we can use the full acceptance of both nakabukures in the pinzu. Pinfu is almost always guaranteed, and we have a shot at iipeikou if we draw - or -, so this choice has the higher expected value.

Both of these choices lead to very good 1-shantens, but cutting is better if you need more points. In actual games, you can justify cutting instead if riichi'ing is risky or if the manzu has dora acceptance.


Prob. B



Here I've made the  from **Problem A** into a . Since this shape is so similar to a wing, it's worth learning.

The  ryanmen is now a  kanchan, so cutting  is now the best move.



The left shape is the wing from **Problem A** shifted to the edge, and the right shape is the one from **Problem B** shifted to the edge. Just like the nine-tile wing, both of these have a subtle  acceptance. It's easy to miss, so be careful.

Utahime Obaka Miiko

One of Masayuki Katayama's most popular series. Although it's just a mahjong manga, you can learn a surprising amount of strategy just by reading it.

It's a really funny series, and I strongly recommend it to beginning and intermediate players.



Info

Point

Practice WWYD problems to prepare for similar situations that show up in-game.

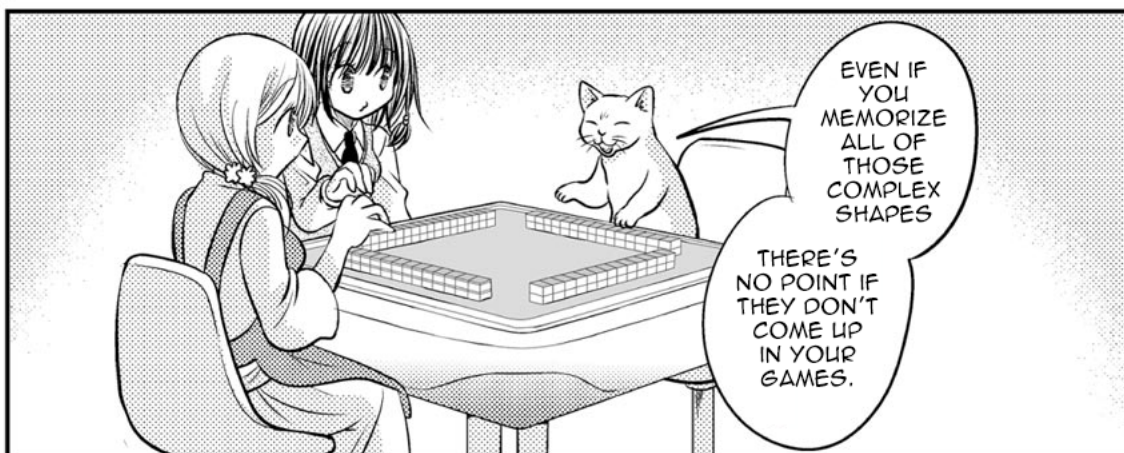
Answers

A:



B:





Chapter 5

Finding Waits

Questions like,
“List the kinds of tiles that will get you to tenpai,” and,
“Find the waits of this closed chinitzu hand,”
show up in real mahjong pro examinations.
In this chapter, we’ll learn how to solve them.





Lesson 63

Knowing Your Acceptance (1)

The pro test hosted by the Japan Professional Mahjong League often contains problems that ask you to find the tiles that will get you to tenpai. In this lesson, I'll teach you how to best approach these.

The next few problems have 13-tile hands. Go ahead and try to solve them.

Prob. A

How many tiles, and in which kinds, get this hand to tenpai?



The trick to solving these kinds of problems is to break them up into parts. First, try finding all of the tile kinds that will get you to tenpai: the *which kinds* part of the question. We have to account for the hand's entire acceptance, including the tiles that will make bad waits like kanchans, penchans, and tankis. Since this hand is at a sticky 1-shanten, all tile kinds within two spaces of (~) are part of our acceptance. Don't forget about the tanki wait through , and the kanchan wait through .

Once you know the number of tile kinds in your acceptance, multiply it by 4. Then subtract the number of tiles of those kinds you're using in your hand to find the number of effective tiles.

Kinds: 11 kinds

Kinds used in hand: 4 kinds, 5 tiles

Doing the math, we get: $(11 \times 4) - 5 = 39$.

The answer is 39 tiles in 11 kinds.

Prob. B

How many tiles, and in which kinds, get this hand to tenpai?



Notice that this hand is also 1-shanten for chiitoitsu. The pinzu from ~ and the souzu from ~ all get our hand to tenpai, so we have a total of 8 kinds of effective tiles.

We are using 7 of those tiles in our hand.

$(8 \times 4) - 7 = 25$. The answer is 25 tiles in 8 kinds.

Prob. C

How many tiles, and in which kinds, get this hand to tenpai?



The manzu from ~ and the pinzu from ~ all get us to tenpai; we have a total of 14 kinds of effective tiles.

Doing the calculation seems hard at first, but notice that all the tiles in this hand are effective tiles. We can just subtract all 13 of these tiles.

$(14 \times 4) - 13 = 43$. The answer is 43 tiles in 14 kinds.



Number of effective tiles = (Tile Kinds \times 4) - Tiles used in hand.

For sticky 1-shantens, all tile kinds within two spaces of floating tiles get you to tenpai.

Answers

A: 11 kinds, 39 tiles B: 8 kinds, 25 tiles C: 14 kinds, 43 tiles



Lesson
64

Knowing Your Acceptance (2)

The last lesson concerned tile acceptance from 13-tile hands. In actual games, you'll also need to know what to cut from 14-tile hands too.

Prob. A



When gauging our acceptance, we count effective tiles toward tenpai as if they're equally practical, but in actual games, this is not the case. There are multiple metrics, like good wait tenpai rate, to each of our three choices in this problem (4 black dragon, 4 red dragon, and 4 green bamboo) that don't correspond to total acceptance.

In the following tables, I only consider ryanmens and compound waits to be good waits. Penchans, kanchans, tankis, and shabos are bad waits.



Total Acceptance		11 kinds, 39 tiles
Good Wait		3 kinds, 12 tiles
Bad Wait		8 kinds, 27 tiles

Cut :                



Lesson 65

Knowing Your Acceptance (3)

In the last lesson, you learned that total tile acceptance is just one metric and that there are other ones you need to consider when counting your acceptance. When bad waits are impossible, however, total tile acceptance and good wait acceptance become the same metric.

Compare these next examples with the acceptance of perfect 1-shantens (16 kinds, 20 tiles).

Case A



6 kinds
20 tiles

Perfect 1-shanten. These hands have two ryanmens and two heads, and it's helpful to think of them as the standard for 1-shanten hands. Its acceptance adds up to a nice, round 20 tiles.

Case B





4 kinds
16 tiles

In this case, we've lost the shanpon acceptance in **Case A**, and we're left with the two ryanmens. Accordingly, this type of 1-shanten is called the ryanmen-ryanmen 1-shanten, and it has four fewer tiles than the perfect 1-shanten.

When you forego the perfect 1-shanten to keep a safe tile like this, we call it "going slim".

Case C

5 kinds
16 tiles

This hand has potential bad waits, but it has no excess tiles. For each of the two ryanmens from a perfect 1-shanten that we replace with a weak shape, we lose four tiles of acceptance. And if we replaced  or  in this hand with a safe tile, we'd lose four more tiles of acceptance and only have 12 tiles of acceptance.

Some people still use the term "perfect 1-shanten" to describe hands like this, but I think there's a distinction to be made here.

Case D

6 kinds
19 tiles

This is also a perfect 1-shanten, but we have a one tile loss in acceptance since one of the ryanmens is connected to a meld at the edge.

In general, the narrower your acceptance, the more each tile of acceptance counts. That's why many prefer to pass up on safe tiles when their acceptance is low. The problem is that you're more likely to fall behind your opponents when your acceptance is low in the first place, which makes it more important to gather safe tiles.

Consider factors like your expected value and how far it is into the game to decide whether you should keep safe tiles or maximize acceptance. You'll get a feel for your own style of mahjong once you've played more games.



Count acceptance at 1-shanten with perfect 1-shanten (20 tiles) as the standard.

The narrower your acceptance, the more each tile of acceptance counts.



Lesson
66

Knowing Your Acceptance (4)




Knowing the difference in tile acceptance between your choices is incredibly useful.

Comparison of Floating Tiles

	Effective Tiles	Difference (vs. )
	5 kinds, 19 tiles	–
	4 kinds, 15 tiles	–4 tiles
	3 kinds, 11 tiles	–8 tiles

All tiles kinds within two spaces of floating tiles are effective in sticky 1-shanten. Thus, the closer the tile is to the edge, the less acceptance it has.

Case A 

Floating Tiles: Since the sticky acceptance of floating tiles decreases by four when they're one space closer to the edge, cutting  yields four more tiles of acceptance compared to cutting , and eight more tiles compared to cutting .

Case B 

Suji Tiles:  is suji to , so cutting  yields eight more tiles of acceptance compared to cutting .

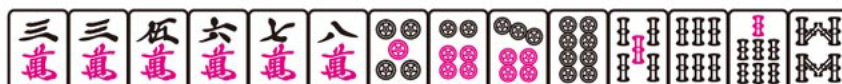
Case C



Suji Tiles: Just like in **Case B**, the is suji to , so cutting still yields eight more tiles of acceptance compared to cutting .

Even though the suji tile is stuck to a run, the difference between and is still eight tiles. As a general rule, suji tiles overlap eight effective tiles.

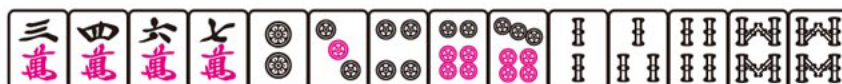
Case D



Head Interference: Cutting yields four more tiles of acceptance compared to cutting or .

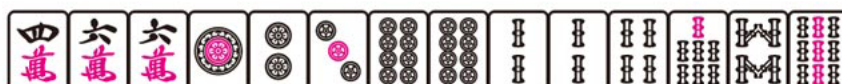
Not only does have overlapping acceptance, but it might also lead to a bad wait.

Case E



Double Acceptance: Dropping yields four more tiles of acceptance compared to dropping or .

Case F



Three Heads: Cutting yields two more tiles of acceptance compared to cutting .



The closer the floating tile is to the edge, the less sticky acceptance it has.

As a general rule, suji tiles overlap eight effective tiles.



Lesson
67

Picking Out Melds (1)

Prob. A



Prob. B



These two problems are almost identical, but they have different answers. We can see that the pinzu differ between the two hands, but how do we even begin to solve these problems?

When we have messy shapes like these, we can use a technique called **picking out melds**. Gather and separate it from the hand.

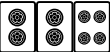

Prob. A +


After picking out , we're left with the complex ryanmen in the pinzu. We'll have to cut something from either this shape, or the other complex ryanmen .

The two complex ryanmens are almost exactly the same, except is connected to a run. When this happens, it makes the shape stronger. Our pinzu have an additional - acceptance because of this.

We're better off fixing the head of , so cutting is the correct answer.

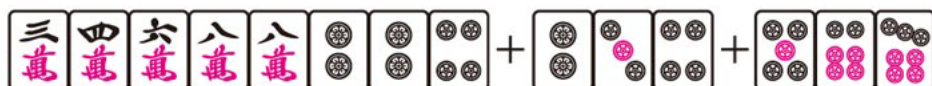
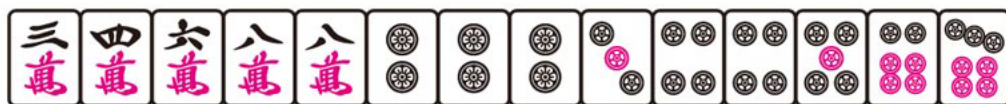
Prob. B  + 


In this problem, we have the complex kanchan  after picking out the meld. Again, we'll have to cut something from either this shape or .

This time, we're comparing a ryanmen and a kanchan. The correct answer is to leave the adjunct tile in the complex ryanmen and cut .

Picking out your melds can help you solve problems with even the most complicated shapes quickly.

Prob. C



Once we pick out two melds like above, we're left with two complex kanchans. Since they're almost the same, we'll just keep the one that can make iipeikou, so the correct answer is .

You could also pick out a meld like in below.



Pick out your melds and compare the shapes you end up with.

Answers

A: 

B: 

C: 



Lesson 68

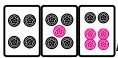

Picking Out Melds (2)

Prob. A



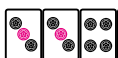
We'll solve this one by picking out melds. Which meld would you pick out, and what would you cut?

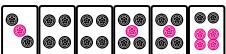
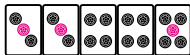


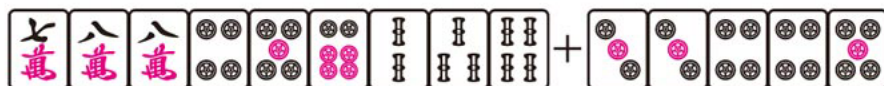
If we pick out , it's obvious our best choice is to cut  for the tanpin tenpai with a chance at iipeikou.


This problem isn't that hard, but lots of people still get it wrong. Our brains seek patterns, so it's easy to pick out the wrong melds just because they line up nicely.



If you're not used to picking out melds yet, you might've tried something like this, fixing the  as an iipeikou. As long as you realized and fixed your mistake after seeing the kanchan left over, it's no big deal. If this were a more complex shape, though, you'd need to be more careful about not wasting time.

Now, what would happen if we picked out  or  instead?



These shapes work just as well for leading us to the correct answer, . The key to finding the best shapes to pick out is to push back against our brain's bias toward iipeikou and recognize that the staggered melds work better in this hand. This is an extremely common pattern that players tend to trip up over, so knowing about it can put you a notch above your opponents.

Info

The human brain is pretty weird. Ever seen this copy-pasta? It went viral on the Internet way back in the day.

Aoccdnrig to rscheearch at Cmabrigde
uinervtisy, it deosn't mtttaer waht oredr the ltteers in a wrod are, the
olny iprmoetnt tihng is taht the frist and lsat ltteres are at the rghit
pclae. The rset can be a tatol mses and you can sitll raed it wouthit a
porbelm. Tihs is bcuseae we do not raed ervey lteter by it slef but
the wrod as a wlohe.



Try picking out staggered melds instead of iipeikou if you're having trouble with a shape.



Lesson 69

Closed Chinitsu Waits (1)

Picking out melds is the most fundamental technique we use when looking for closed chinitsu waits.

A winning mahjong hand has four melds and one head, so at tenpai, you'll always have either (1) four melds and a tanki wait, or (2) three melds, a head, and a joint.

Just by picking out two melds from your 13-tile hand, you can make it easier to find waits by narrowing your hand down to a more manageable (1) two melds and a tanki wait, or (2) one meld, one head, and a joint.

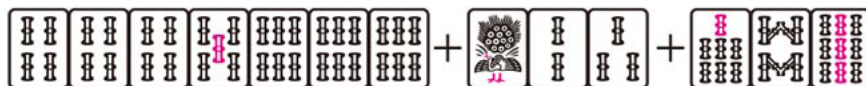
Let's try an example. What are the waits of this 13-tile hand?

Prob. A

Find this hand's waits.



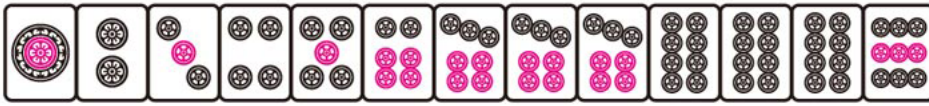
Start by picking out two melds at the edges of the hand.



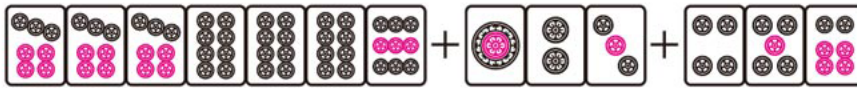
After picking out two melds, we're left with . If you recall from the seven-tile shape list, this is a five-sided wait on , , , , and . Even if you haven't remembered all of the shapes on that page, you should be able to figure out its waits by picking melds out from this shape in a few different ways.

Prob. B

Find this hand's waits.



Again, pick out two melds from the edges of this hand. You might be tempted to pick one meld from each edge, but could become a head, so let's leave the right edge alone. We'll take two melds from the left edge of the hand instead. Notice that we've kept the potential closed sets intact.



After picking out two melds, we're left with . This is a three-sided wait on , , and .

If you've committed the seven-tile shapes to memory, finding closed chinitzu waits is just a matter of picking out the right melds. You can get by with picking out even more melds until you're left with simple waits, but memorizing seven-tile shapes will significantly speed up the process. Try to learn as many as you can!



Pick out two melds from a 13-tile chinitzu hand, and you get a seven-tile shape.

Pick melds from the edges of the hand, but not when it could make a head.

If you've committed the seven-tile shapes to memory, finding closed chinitzu waits is just a matter of picking out the right melds.

Answers

A: · · · · Wait

B: · · Wait

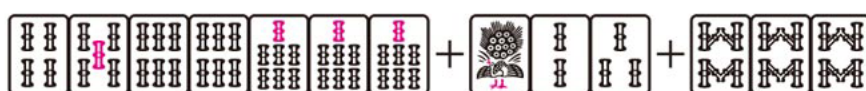


Lesson 70

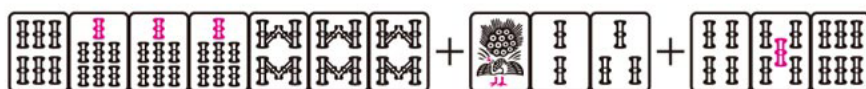
Closed Chinitsu Waits (2)

Prob. A

Find this hand's waits.



If we pick out two melds from both edges, we're left with the seven-tile shape . This is a four-sided wait on and .



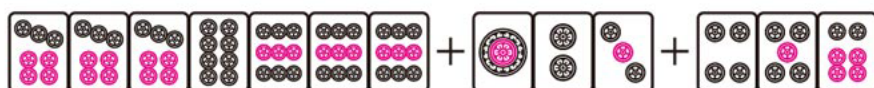
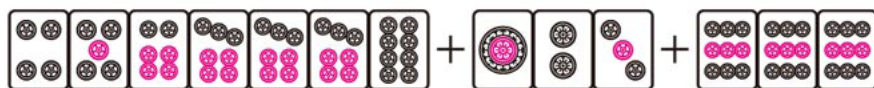
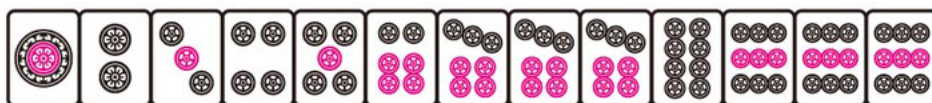
If we pick out two melds from only the left edge, we're left with the seven-tile shape . This is a four-sided wait on -, , and .






Putting all of this together, we get a five sided wait on -, -, and . In this case, we had to pick out melds twice to find all of the waits.




To avoid missing waits when you're picking out melds, check to see if there is a **key tile**. The key tile in this problem is . It can be seen as both a tanki wait and part of a meld; thus, we call it "key" to the compound wait. When the key tile is connected to a completed meld, the wait can be extended, and other waits can arise as a result. In most cases, these are the suji to a key tile.

Prob. B

Find this hand's waits.



The key tile is , so let's pick out melds in two different ways: once from each edge, and twice from the left edge. If we put the waits we get from both shapes together, we get a five sided wait on , , , and .

 can be seen as either a tanki, or a part of two different melds ( and ). As long as you account for all three of these configurations, you won't miss any waits.

The most common method that's taught for dealing with closed chinitzu waits is to pick out closed sets first and foremost. My approach is to identify key tiles and then to pick out melds so that it's left in the seven-tile shape. This means we'll usually be picking out runs first, before we pick out any sets.



Check if your waits are extended from the key tile, or if there are other hidden waits.

Answers

A:  -  -  -  - 

B:  -  -  -  - 



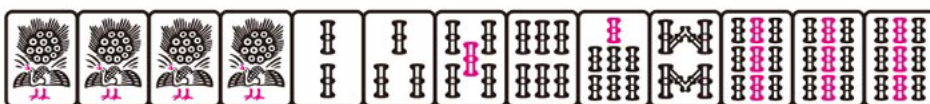
Lesson 71

Closed Chinitsu Waits (3)

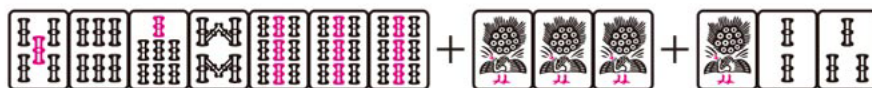
Some shapes at tenpai only have one possible configuration.

Prob. A

Find this hand's waits.



Consider the four in this hand. The shape can only be split into + , and nothing else.



If we pick out these two melds, we get a seven-tile shape with waits on and .

Prob. B

Find this hand's waits.



This one is obvious once you see the right edge. The can only be used as a penchan joint. This is a penchan wait on .

Prob. C

Find this hand's waits.



This one looks like the penchan case in **Problem B**, but since the joint overlaps with a run, can actually be used as the head.

If we think of as the head, we have a penchan wait on . If we think of as a meld, we have a tanki wait on . Thus, this hand is waiting on and .

As you can see, it's always helpful to keep track of the head, even if you think you can find its waits at a glance.

It's especially easy to miss waits on tiles when you're already using two or three of them, so be careful. Also, if you're using four of a tile kind in your hand, be on the lookout for waits suji to that kind.

Simply put, terminals can only be present in a winning hand in three configurations: as the head (), a set (), or a run (). On the other hand, inner tiles like have more possible configurations because it can appear in three different positions in a run (), (), and () in addition to being a head or a set, which gives it five total configurations. For this reason, it's more helpful to pick out melds that have tiles with the most limited configurations before you move on to tiles with more versatility.



Pay attention to tiles with limited configurations when looking for waits.

Answers

A: - - -

B:

C: -



Lesson 72

Closed Chinitsu Waits (4)

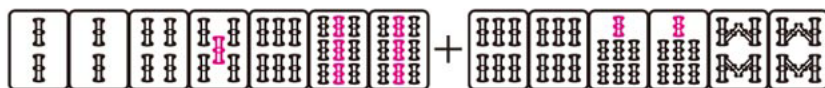
Shapes with potential iipeikou can make finding closed chinitsu waits much more difficult.





Prob. A

Find this hand's waits.



Picking out the right edge iipeikou lets us see a , - wait.




Picking out the ,  iipeikou lets us see a ,  shabo wait.



Picking out the ,  meld lets us see a , - wait.

Altogether, we get a four sided wait on  and --.

Once you've tried picking out melds one way, try to be mindful of other waits you might be missing. If you were to only pick out the right edge iipeikou, you'd miss the wait on .

Prob. B

Find this hand's waits.



This is also a closed chinitzu hand with potential iipeikou. It has a six-sided wait on 4, 5, 6, 7, 8, and 9.



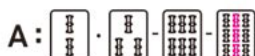
The two seven-tile shapes above both have compound waits with a shabo.

Take note that shapes with potential iipeikou can have a shabo wait hidden in them.



Sometimes, shapes with potential iipeikou can extend waits or make a shabo.

Answers



Sumire's Notes

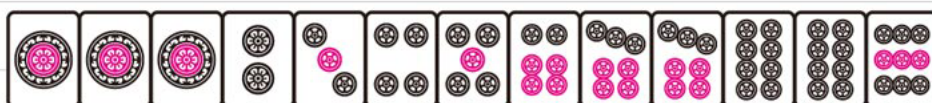
Homework

Find the waits.

Prob. A



Prob. B



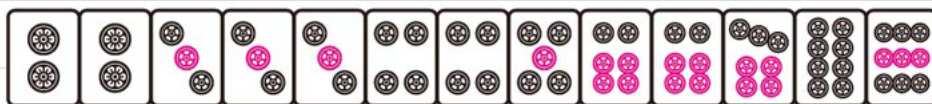
Prob. C



Prob. D



Prob. E

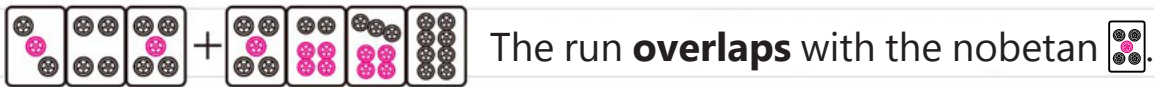
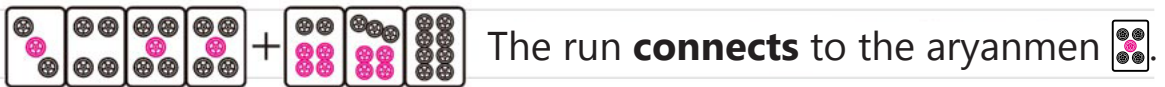




Tips For Finding Closed Chinitsu Waits

1. Try to find the key tile (it's usually a potential head).
2. Pick out melds at the edge.
3. Look for seven-tile shapes (and memorize as many as you can).
4. Pick out iipeikou (or other similar shapes) first.
5. Check the suji of your waits to see if your waits are extended.

How do wait extensions work?



Even though it's a three-sided wait, this shape waits on nine tiles max.

Answers

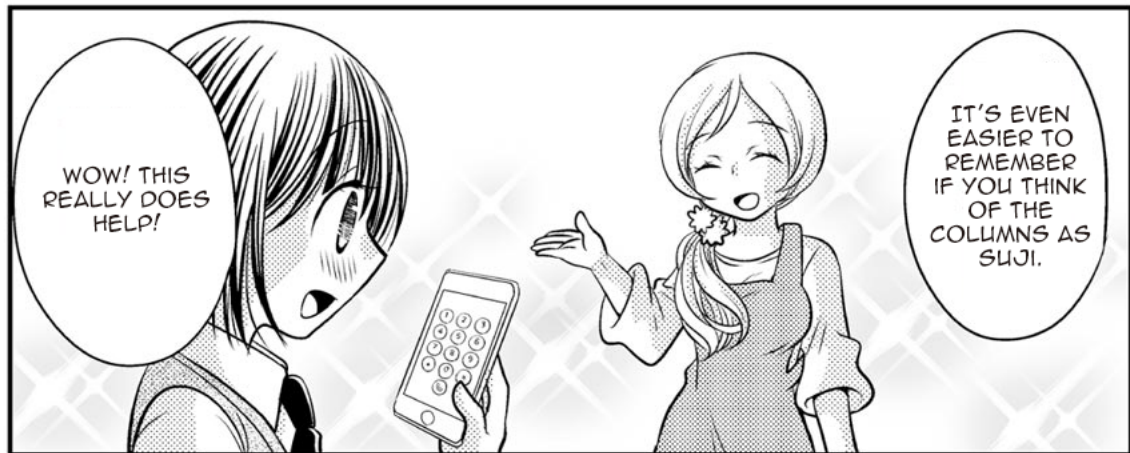
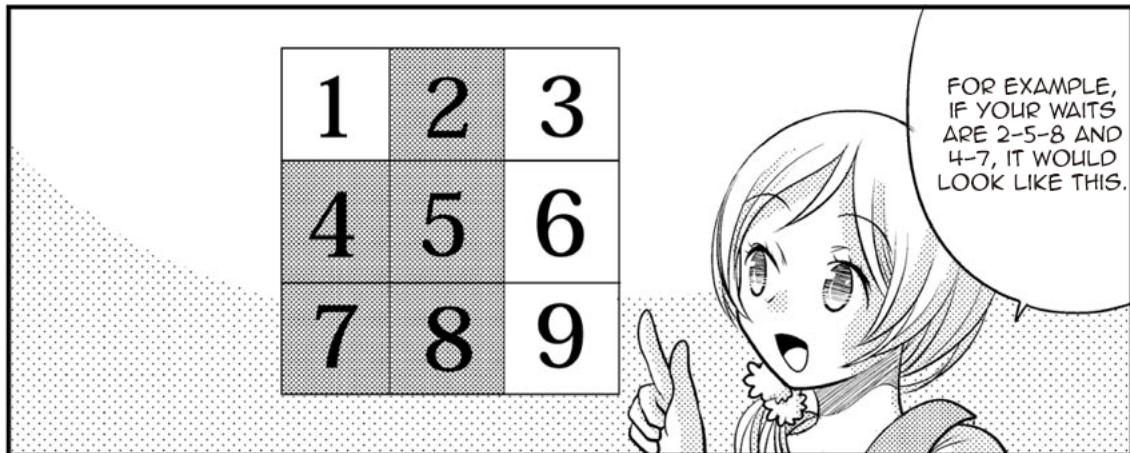
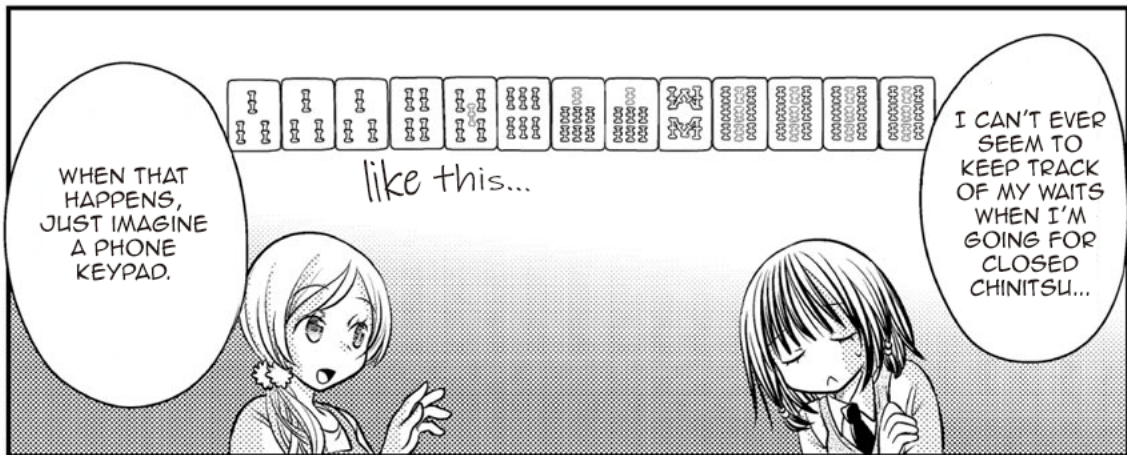
A: 四・七・五・八

B: 一・四・七・二・五・八

C: 三・六・九

D: 一・七・九

E: 一・四・七



Chapter 6

Techniques

Next, we'll learn about a few techniques. A book on tile efficiency wouldn't be complete without these!

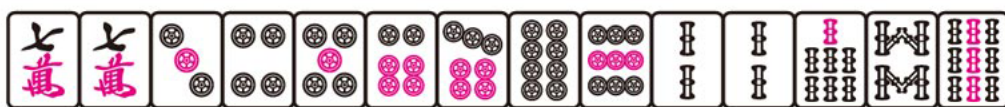





Scrimping

To **scrimp** (jp: *ukaseuchi*) is to cut a tile from a pair and keep the other tile to use as a sticky floating tile.

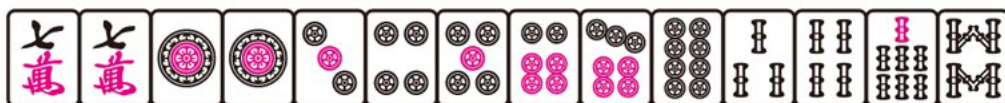
Prob. A





Scrimp and revert from tenpai.

Cutting from the pinzu can get us to tenpai, but it's generally better to scrimp the  and go for ittsumi or sanshoku. Depending on the situation, you might instead opt to take the tenpai or even riichi.

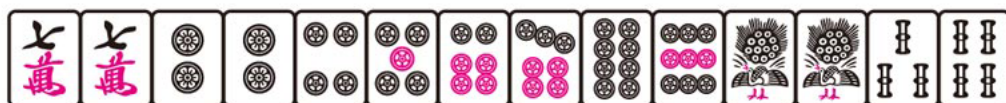
Prob. B



An 1-shanten hand. We have a block surplus, so scrimp the .

If one of the souzu ryanmens completes immediately, riichi with the second . If you make progress toward ittsumi instead, you can consider dropping a souzu ryanmen joint.

Prob. C



An 1-shanten hand with three heads. Scrimping the is incorrect. This is an example of when you shouldn't scrimp.

The correct answer is , not to scrimp, but to drop the pair.

If we draw afterward, we'll be at 1-shanten with a potential ittsumi.



Drawing gives us a perfect 1-shanten with potential ittsumi.



With this hand, even if one of our heads becomes a set, we can take a tanyao tenpai.

Remember: when you've only got one head, keep it separate from your yaku. When you've got multiple heads, use them to help build your yaku.

In **Problems A** and **B**, we could only afford to keep one head, so we kept the head that was isolated from our yaku shapes. In **Problem C**, we'd still have two heads even if we dropped one, so we can instead drop the one that was most isolated from our yaku.



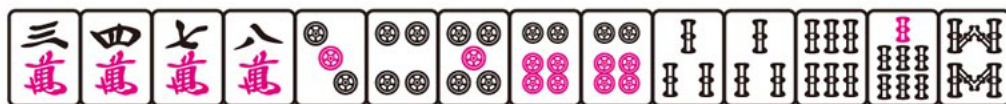
Scrimping is when you cut a tile from a pair and keep the other one in your hand.



Lesson 74

Prospective Upgrades (1)

Prob. A






The typical move, in this case, is to cut . Just like or , it yields the broadest acceptance at 16 tiles in 4 kinds. If you draw or to make a sanmenchan afterward, look at the discards and drop the weaker ryanmen.

If we need points, cutting to go for 3-4-5 sanshoku doesn't look like such a bad move, but we won't get the yaku unless we draw the exact three tiles , , and . A riichi tanpin sanshoku hand is a big return, but then again, we'd have to draw first above all else. Otherwise, there's not much of a point in going for it. Drawing first won't put us into a sanshoku tenpai, and we're better off taking the riichi instead. Drawing first gives us a kanchan, which isn't worth dropping the ryanmen to keep. Since we have to draw the tiles in a particular order, the success rate of this kind of upgrade is very low. You shouldn't really consider cutting , especially when playing with red fives.

That being said, we do have a third option: cutting . This move yields 12 tiles in 4 kinds, which is four tiles less of acceptance, but if we get a tile to stick to or , our acceptance could increase, and we might get a better 1-shanten.



For example, drawing  gives us a perfect 1-shanten (20 tiles in 6 kinds). Cutting  from the get-go with this hand in mind is a sound move.

Prioritizing immediate acceptance in **Problem A** by cutting  is fine for our purposes, but in actual games, it's sometimes better to go for the prospective upgrade. Being able to consider and adapt to the situation is good practice and a sign of a strong mahjong player.

When you have to choose between immediate acceptance and prospective upgrades, you should think about how easy it is to get the upgrade and how much safety you'll have. But what ultimately matters the most is how many more points the upgrade will give you. If the prospective upgrade guarantees two more han, you should generally go for it.

Info

Providing an exact measure for considering prospective upgrades is difficult. For example, an upgrade from sanankou to suuankou gives a hand huge value, but that isn't to say it's always worth going for. The more value a prospective upgrade gives, the harder it usually is to attain.

Also, there aren't very many ways to simulate hand progressions from tenpai, like breaking tenpai for upgrades or changing waits. More research about this needs to be done.



Prioritizing immediate acceptance is, in theory, most efficient.

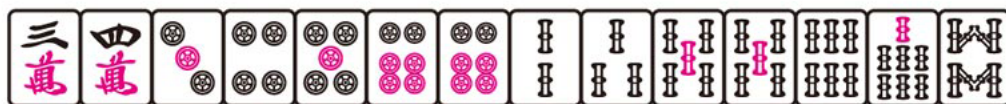
But in practice, you should also consider prospective upgrades.






Lesson 75









Prospective Upgrades (2)

Prob. A



This problem is similar to the one from the last lesson. Take a moment and think about what you would cut.

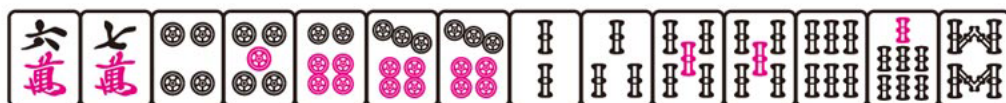
Cutting  or  would work well. But we have a third option that works better: cutting .


Since the  ryanmen joint is only separated from the  pair by one space, we can cut , and  won't become an excess tile. Instead, it acts like an adjunct tile for the  pair. Because of this, cutting  yields the same amount of tile acceptance as cutting  or  does; 16 tiles.



Since this choice doesn't lose us any acceptance and keeps the potential for upgrades to the pinzu, our third option decidedly wins out this time. In the last lesson, it didn't make much of a difference whether we went for the prospective upgrade or not, but this time, we'd be losing out on a chance to increase our acceptance.


Hands with hidden "third options" often have a nice balance of suits, so this method of play often lets you take advantage of sanshoku chances. Modern mahjong theory maintains that you shouldn't go for sanshoku too aggressively, but you shouldn't let these opportunities escape you when sanshoku could otherwise complete naturally.

Prob. B

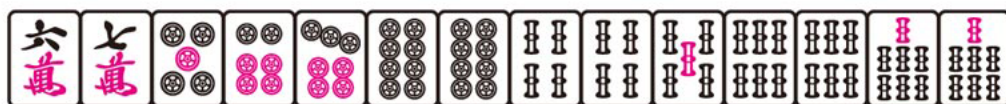



We have a chance at 5-6-7 or 6-7-8 sanshoku, but the correct answer is still to cut , just like in **Problem A**.




Cutting  to push for sanshoku doesn't do much for us here since 6-7-8 sanshoku can still turn up naturally even if we cut .

Cutting  also maximizes our chance at tanyao.

Prob. C



In this case, cutting  keeps the hand open to both 5-6-7 and 6-7-8 sanshoku, so this move has the highest expected value.

Compared to  (4 kinds, 15 tiles), cutting  or  yields four more tiles of acceptance (6 kinds, 19 tiles). But the value that sanshoku returns if we manage to build it into our hand is worth much more than this increase in acceptance.



Ryanmen joints separated from pairs by one space won't make an excess tile if you cut the tile furthest away from the pair.

Hands with hidden third options often let you take advantage of sanshoku chances.






Lesson 76

When in Doubt, Fix the Ryanmen







Prob. A



At first glance,  looks unnecessary in this hand, but it actually lends a  acceptance. Given enough time, many players could probably figure out when to cut , but it's pretty hard to make such a judgment within the limited amount of time that online mahjong clients give you to choose a tile. And in actual games, it's embarrassing to make your opponents wait!




When you're faced with a difficult hand, fixing the ryanmen is usually your safest bet.

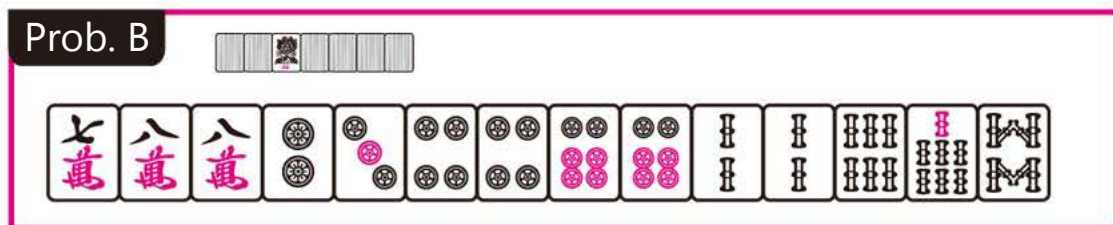
As long as you remember to fix ryanmens like this, you'll be able to avoid making most huge blunders. It's kind of like if you chose to go with an answer that probably won't get you full points but will easily get you at least partial credit.






Ryanmens are strong joints that only use two tiles, and they're rarely "bad" as a wait. If we cut  from **Problem A** and draw  later, it hurts a little to miss out on the closed set. But now, if - turns out to be our final wait, having two  in our discards makes  easier to win off of (due to the sakigiri effect).



Now let's solve this problem with a more logical approach.



We get three heads if we split our hand like this, so we should cut  to maintain our blocks and reduce the hand's heads to two. The main idea is to see  as an adjunct tile for the  pair.



This hand is at 1-shanten and has three heads. We have a chance at a mangan if we can pon  later, but that's not guaranteed to happen. To prepare the hand for a  pon, we'd want to keep  and secure tanyao. Cutting  instead is otherwise our best choice for open tanyao, but it removes  acceptance toward tenpai. In any case, all of our options have drawbacks, so it's hard to make a choice.

Remember: "when in doubt, fix the ryanmen." Cut . If there's no clear potential benefit to any of your options, you should typically choose the one that allows you the most acceptance in a closed scenario. Even without a dora set, the hand could get a lot of value with other possible yaku like riichi, or uradora han. Cutting  also has the benefit of contributing to the sakigiri effect if we get to riichi early.



Raise your speed of play by remembering: "when in doubt, fix the ryanmen."

Typically, you should choose the option that yields the most closed acceptance.

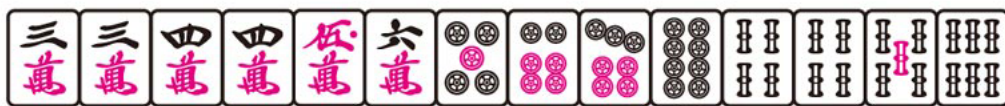







Lesson 77



When in Doubt, Cut the Aryanmen

Prob. A

[Turn 5]














Cutting  yields 45 tiles in 14 kinds,  yields 42 tiles in 13 kinds,  yields 37 tiles in 12 kinds, and  yields 18 tiles in 8 kinds. Note that one  is being used as the dora indicator.






The correct answer is to cut  from the aryanmen. According to our mahjong simulator, this choice wins out in tenpai rate, win rate, and expected value. It also leads to a high good shape tenpai rate. We don't consider , because we want to maximize our chances at sanshoku.


I've gone over this idea that cutting aryanmens is almost always correct in *Aryanmen* (1), but it's so applicable in actual games that I'm going over it a second time here.



If you didn't get the problem right, I suggest you reread the lessons *Aryanmen* (1) and *Yonrenkei* (2).

For those of you who chose , take note: this choice wins out in pure tile acceptance, but drawing , , and  gives us a kan-chan wait; and - and  give us a shanpon wait. It leads to too high of a bad wait rate, so  is the better option.

If you're planning on calling, you might be tempted to keep  because it's an inner tile. But on the contrary, cutting  could make it harder to chii tiles like  into a ryanmen wait since you'll only be able to call inner tiles.

Cutting  instead means that, realistically, you can only call  in the souzu. Chii'ing  doesn't guarantee a mangan, and chii'ing  leads to a one-sided wait, so only  would be a decent tile to call in the pinzu. With such poor calling tiles, it's better to prioritize closed acceptance.




As long as the situation doesn't call for anything extreme, you should be comfortable with this choice in most cases. Even if it's all-last, and you just need to win with any hand to be first, the correct answer is still .

But if you desperately need a big win, keeping  for dora acceptance might be okay. In any other situation, this is bad since the slim chance of a large increase in points doesn't make up for the vast decrease in your chances at a good wait and yaku like pinfu. Keeping  here simply has too many drawbacks, so this move should be reserved for situations where you'd need at least a haneman to avoid last place.

Considering all of these factors correctly in real time is hard, to say the least. As long as you remember the principle, "when in doubt, cut the aryanmen," you won't make any huge mistakes when faced with a hand like this in a real game.

Vocab

Agari-top (jp: *agaritoppu*): A special case in all-last where any hand you win will give you first place overall. In this situation, your priority is to win at all costs, no matter how cheap your hand.

One-sided wait: If you call with tanyao as your only yaku, what would normally be a ryanmen - wait ends up as a one-sided  wait.



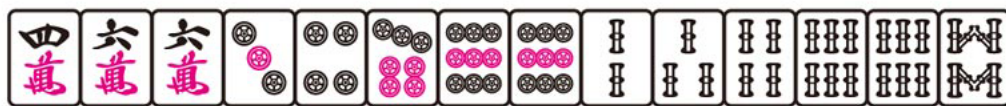
Avoid blunders by remembering: "when in doubt, cut the aryanmen."













Lesson 78

Cutting Inward

Prob. A








This hand has three heads, quite a few weak shapes, and only one complete meld. Undoing a pair by cutting , , or  yields the most acceptance, at 24 tiles 7 kinds. Fixing a pair by cutting , , or  instead yields 22 tiles in 7 kinds.

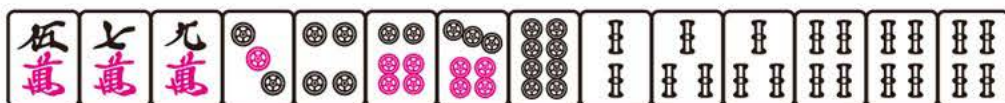
As for yaku, we could go for pinfu, 2-3-4 sanshoku, or tanyao. Sanshoku is possible as long as we draw  or . Cutting  doesn't seem bad since its only backfire is . This is the kind of hand that could even stump seasoned players.

There are a plethora of things we could take into account in this problem, but actually, we don't have to think too hard about this one. It comes down to the principle of "cutting inward".

Much like I've detailed in the previous lesson *When in Doubt, Fix the Ryanmen*, when faced with a difficult hand, you can think about cutting inward (that is, cutting the outer-most numbered tiles), to develop your hand for tanyao. It's a simple technique, but you can apply it to many cases.

For **Problem A**, cutting inward with  won't lose you an enormous amount of acceptance, nor is there much backfire. Upgrading to a callable hand is very helpful, and once you secure tanyao,  contributes to acceptance you otherwise wouldn't have if you cut it instead. If you draw  or  for sanshoku, you'll have six blocks, so you could then drop .

Prob. B



The technique also applies to this problem. Instead of fixing the souzu into a meld and a head, you could also cut inward with 9000.

Cutting 9000 loses us four tiles of acceptance compared to 1000 or 1100, but because 9000 only accepts the backfire 8000, it won't impact our speed very much. Then, of course, there's the added benefit of increasing our chances of tanyao.

With this choice, any of 5000 or 7000 turns our manzu into a head and upgrades the hand to perfect 1-shanten, and any of 1000~1200 turns our souzu into two melds.

Cutting inward is a solid technique, but it can sometimes make your hand bulky, making it harder to play defensively. Always pay attention to your opponent's discards when playing this way.

Vocab

Bulky (jp: *bukubuku*): When you cut safe tiles to maximize acceptance, your hand is "bulky". This is the opposite of "going slim".



When in doubt, develop your hand for tanyao and cut inward.

Avoid cutting inward when you need to play defensively.

Answers

A: 1000

B: 9000




Lesson 79

Making Your Own WWYDs




Solving lots of WWYDs doesn't count for much if you're just memorizing the answers. The benefits of WWYDs come from applying their concepts during actual games.



In my opinion, one of the best ways to get stronger at mahjong is to make your own WWYDs. When you share your problems with other players, you'll have to explain the correct answer and why it's the best choice, which forces you to acquire more knowledge in tile efficiency. You can choose to build problems from the ground up or modify existing problems to your liking.

Prob. A

Here we have an eight-tile wing. The correct answer is to cut  and fix the dora pair. Think of the pinzu as two nakabukures.

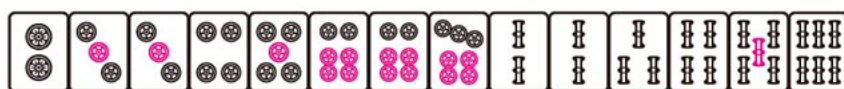
Let's build a new WWYD using **Problem A** as a base.



The most straightforward modification we can make is to change the dora. Just by doing this, the correct answer also changes. For example, if we change dora from  to , the correct answer switches to .

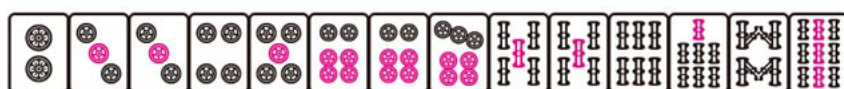
Changing dora to tiles that we might end up cutting leads to some interesting scenarios too. Think about what you would cut if dora were  or .






You should also try shifting the shapes to other positions too.

The souzu in **Problem A** can easily be split into two blocks, so let's connect them into one big shape.



If we shift  toward , the new shape could become a three-sided wait, so now, there's more of a reason to preserve it.



But if we shift  toward  instead, we're less compelled to preserve the shape. If left as a wait, the shape can only become a ryanmen, and we're already using one tile of  in the - wait. Also, these tiles are relatively harder to win off of because they're inner tiles.

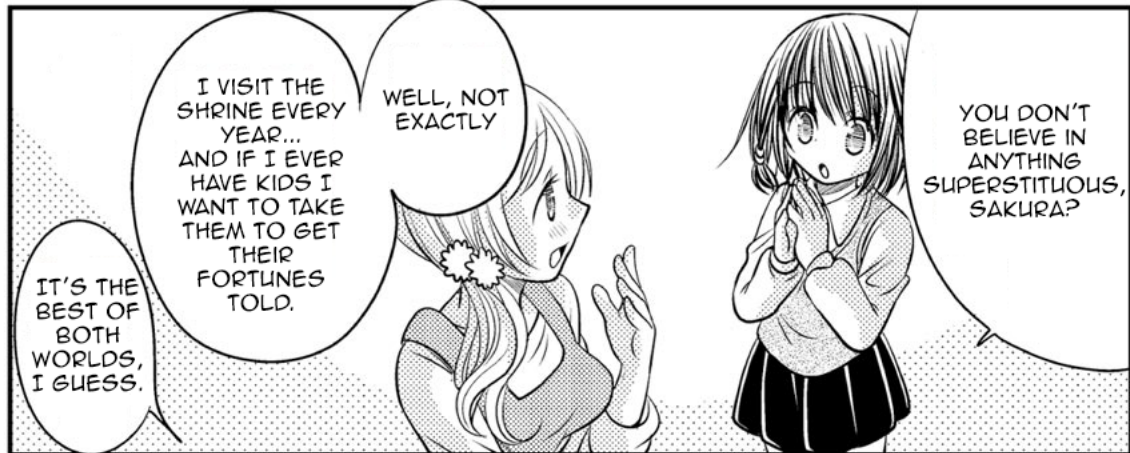
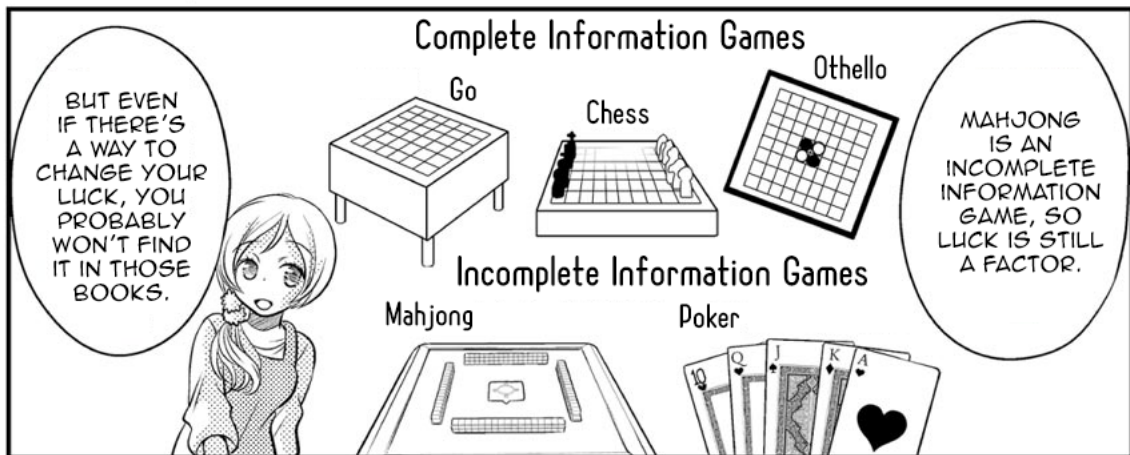
The point of this exercise is to think about what changes to the problem would make you change your answer. It helps you engage deeper with the problem, and ups your judgments' accuracy and your confidence in them.



WWYDs aren't helpful if you're just memorizing the answers.

Making your own WWYDs forces yourself to think deeply about tile efficiency.

You can make new WWYDs by simply changing dora or shifting shapes in the hand.



Chapter 7

Calling Efficiency

Calling judgment is one of the most controversial topics in mahjong. There are so many factors that go into this that some authors have written entire books exclusively about it.

This chapter will introduce some fundamental calling principles based on tile efficiency theory.





Lesson
80

Chii is 2x, and Pon 4x As Fast

You can chii tiles from one opponent, your left player. Because of this, we can think of our left player's discards as an extension of our own draws that approximately double our access to tiles.

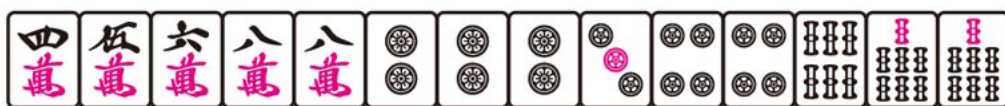
On the other hand, you can pon tiles from any of your three opponents. With the same logic, pon expands your access to tiles by four times. Thus, chii makes your hand two times faster, and pon makes your hand four times faster than a closed hand.

If there's no difference in tile acceptance between any of our choices, we should go with the one that makes it easier to call. Sometimes, it's even better to go with a discard that yields less acceptance depending on the tiles available for us to call.

If it's all-last and you only need to win a cheap hand, what would you cut from the problems below?

Prob. A

[Agari-top]




Prob. B

[Agari-top]





The correct answer for **Problem A** is just the one that yields the most acceptance, . Pretty straightforward, right?








For **Problem B**, however, the correct answer is not .

The tile acceptances for our choices in **Problem B** are as follows:



Cut  ...        7 kinds, 20 tiles

Cut  ...        6 kinds, 17 tiles

Since we don't care about points, we should choose whatever makes it easiest for us to call. Cutting  yields the most acceptance but makes it so that the remaining joint can only accept  when we want to call into open tanyao. Some players don't mind the one-sided wait, but it's best to avoid this scenario whenever possible.

Cutting  loses us three tiles of acceptance compared to , but it leads to a hand that's much easier to call. We can pon  , and ; and chii  and . Of course, we'll end up with either a three-sided entotsu wait or a shanpon, depending on which tile we call, but all of these waits guarantee tanyao.

Cutting  from **Problem A** yields both the best open and closed acceptance.

Cutting  from **Problem B** yields the best closed acceptance, and cutting  yields the best open acceptance.



Chii makes hands 2x faster than closed hands, and pon makes them 4x as fast.

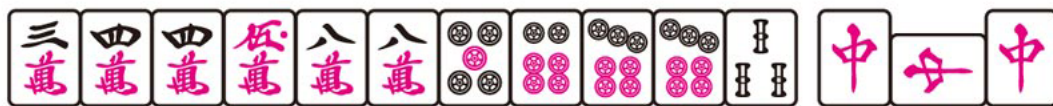
If you don't need to worry about points, cut whatever makes it easiest to call.



Lesson 81

Some Shapes Are Better If You're Calling

Prob. A



With three dora, this hand is a guaranteed mangan, so we want to call whatever we can to win as fast as possible.

Cutting yields the most acceptance, but it's better to keep it since the nakabukure will likely make a ryanmen wait.

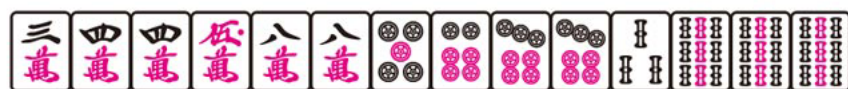
That leaves us with two options: or . Let's consider the waits we can make with these tiles. overlaps with a meld, which means that sticking a tile to it only results in a seven-tile wait at most. Drawing for a kanchan wait on is especially bad since there are only three tiles of that kind remaining. In contrast, leads to an eight-tile wait if you can make a ryanmen and a four-tile wait if you make a kanchan. However, all of these arguments apply to closed hands, and right now, we're looking to call.



If we keep we can chii for a ryanmen wait. We can also pon the dora for an aryanmen wait or chii for a shanpon wait on and . So even though those waits aren't the best, there are several tiles we can call to get to tenpai.

Cut to maximize the tiles we can chii for tenpai.




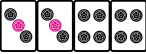





For hands where calling isn't possible, the difference between these two choices is not as great.



I've stressed in past lessons that ariyanmens are weak shapes, but they're actually a bit stronger in open hands.

The main idea of this lesson is that some complex shapes are better in open hands. You should cut differently depending on whether you want to keep your hand closed or open it.

The following shapes also vary in strength in closed and open hands.

- ▶  ...  is hard to use in closed hands, but in open hands we can chii  to make a ryanmen joint.
- ▶  ... We can pon and chii tiles into adjacent pairs, so they're much stronger in open hands.
- ▶  ... For penkanchans, not only can we chii , but also , so they're easier to complete in open hands.
- ▶  ... In closed hands, we'd typically cut  from this shape, it can help to keep it intact in open hands.



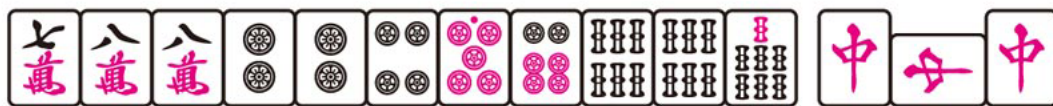
Keep in mind that some weak shapes are better if you're calling.











Lesson 82

Calling Efficiency (Strong Shapes, Three Heads)

Prob. A





We have four choices: , , , and . Cutting  or  fixes a head, and cutting  or  fixes a ryanmen.








Let's compare the tile acceptances between cutting  and .


Cut  (fixing a head) ...      (5 kinds, 14 tiles)








Cut  (fixing a ryanmen) ...      (6 kinds, 20 tiles)

Cutting  and wins out in terms of acceptance, with six more tiles over cutting . But we're only considering our own draws here. So let's take calling into account in our comparison as well.

Cut  (fixing a head)



								Total
Draw		2		2	4	2	4	14
Chii					4		4	8
Pon		6		6		6		18
Total	0	8	0	8	8	8	8	40





Cut  (fixing a ryanmen)

								Total
Draw	4		4	2	4	2	4	20
Chii	4		4		4		4	16
Pon				6		6		12
Total	8	0	8	8	8	8	8	48

These tables assume that all tiles are evenly as likely to be discarded by opponents. Pon is weighted as three times likelier than normal draws.

Note that the tables above assume that all tiles kinds are equally as likely to be discarded by your opponents. Since pon can be called on all three of your opponent's discards, I've weighted it to three times the number of our own draws.

The acceptance for cutting  now comes to 40 tiles, and for  it is now 48 tiles. Fixing the ryanmen with  still wins out.

Of the four options I mentioned initially, two of them ( and ) fix a ryanmen. Since  is an outer tile and easier to pon, we should preferably keep it and cut  instead. For actual games, get into the habit of considering your final wait and anticipating tiles you'll most likely be able to call.

In these situations, you should almost always fix a ryanmen, even if you think there aren't many tiles that can complete your shapes in the wall. This is because ryanmens are the strongest waits (aside from compound waits), so you want to maximize the chance of getting one. If you fix a pair instead, you will need to complete the shanpon not associated with your ryanmen first to get a ryanmen wait, which only happens about 40% (16/40) of the time. Also, remember that fixing a pair gives you less tile acceptance than if you'd fixed a ryanmen. There just aren't many scenarios where low tile counts can make up for this.

Notice that when we take calling into account, each kind of tile accepted counts for eight tiles (see vertical totals in tables).

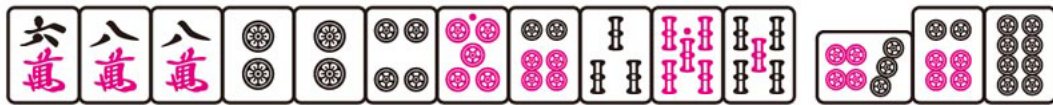


Almost always fix a ryanmen when your hand has strong shapes and three heads.









In open hands, each kind of tile accepted counts for the equivalent of eight tiles.

Calling Efficiency (Weak Shapes, Three Heads)






Prob. A








As I mentioned in *Three Heads is Worst (1)*, undoing a pair when we have three of them yields the most tile acceptance, two tiles more than if we'd fixed a pair. But what about our acceptance when we're calling?

Our four options are , , , and . For the sake of simplicity, let's compare the manzu  and  only. Cutting  fixes a head and cutting  fixes a kanchan.

Cut 六 (fixing a head)








						Total
Draw		2	2	4	2	10
Chii				4		4
Pon		6	6		6	18
Total	0	8	8	8	8	32


Cut  (fixing a kanchan)

						Total
Draw	4		2	4	2	12
Chii	4			4		8
Pon			6		6	12
Total	8	0	8	8	8	32

As you can see, if we take calling into account, we end up with the same amount of acceptance between both options, 32 tiles.

Since there is no difference, we should preserve the three heads so we can call pon. Pon is stronger than chii because we can pon tiles from all three of our opponents, giving us more opportunities to get to tenpai. As a plus, pon can also skip opponents' turns and prevent your own turn from getting skipped.

To fix a head, we can either cut  or . The question, of course, is, which one to choose? Without any information on discards in this problem, we can think about possible upgrades instead. Notice that our only yaku right now is tanyao. If we were to draw  to stick to  and make a ryanmen, tanyao wouldn't be secured. But if we drew  (or even better, ) to stick to , we could keep the ryanmen with no issue.

Our best move, then, is to cut  and hope for a ryanmen upgrade while we look to pon to tenpai. Of the three heads that we've preserved, two of them are relatively easy to call, so we don't have to worry too much about upgrading before we get to tenpai.

Keep in mind that the reasoning I've used in this lesson assumes that all tile kinds are equally likely to be discarded by opponents and that there are other potential hand upgrades we haven't considered. You should pay attention to these two factors in actual games, as they're quite important.



In open hands with weak shapes, fix heads to make it easier to pon to tenpai.

Consider the upgrades between the joints you'll keep before fixing a head.



Lesson 84

Look Out For Open Mangans

In this chapter, we've mostly focused on improving the speed of our hands by taking advantage of pon and chii. But unless you are in an agari-top scenario, strictly prioritizing speed is not always ideal.

Closed hands offer many different ways to increase your hand's value by chance once you riichi, such as ippatsu, tsumo, and uradora. Unfortunately, calling immediately erases your chance at these han, so the upper limit of your score is usually set once you make that first call. This is why you must learn to recognize and act upon appropriate times to make calls.






Some of the most important calls to recognize and make are those that will lead to a mangan. These hands are powerful, hard-hitting, and can be worth pushing in many different scenarios. On the other hand, you should avoid making calls that do nothing but lower your hand's value.






Info

The mahjong scoring system is designed so that all scores below mangan value double when you go up by one han, and halve when you go down by one han. That means the largest single relative increase in score occurs between a 30 fu 3 han hand and a 30 fu 4 han hand. For non-dealers, this is 3900 to 8000 (a 4100 point difference), and for dealers, this is 5800 to 12000 (a 6200 point difference).





Prob. A



Cutting the dora  leads to the broadest tile acceptance, at 50 tiles. , , and  are tied for the next most acceptance, 41 tiles. Note that one tile of  is being used as the dora indicator.

I recommend cutting  and keeping the dora  here, even with the nine-tile loss in acceptance. If we cut , we'll only have a 3900 point hand once we call unless we somehow get  into our hand. However, using  means that we'll be able to ensure a mangan even if we call, so we'll be making up for the loss in acceptance with more points.

The difference between 50 and 41 tiles of acceptance is an 18% decrease, but we get two times the score. In most cases, that's more than enough to justify the relative reduction in speed.

By the way, if you're wondering why we cut  and not  or , it's because we can chii  for a wait in the souzu.



Learn to recognize and act upon calls that will lead to a mangan.

Hands that are mangan when you call are powerful. Sometimes, you can justify a blow to acceptance once you call if your hand's score makes up for it.








Lesson
85

Legal Swap-Calling

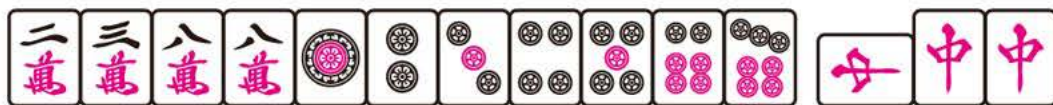
In the last lesson, I pointed out how the upper limit of a hand's score is usually set once you open your hand. The exception to this is when you're playing with red fives. Depending on your shapes, you might be able to make a legal swap call and chii a left player's red dora discard to increase your hand's value without losing tenpai.

There are several different types of swap calls, but here, I'll only be talking about swap calling techniques for runs.

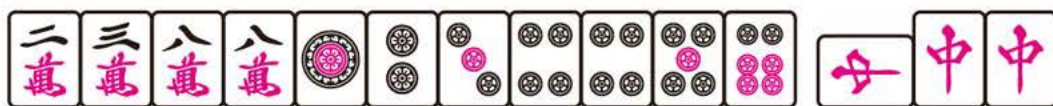
The swap-calling rule (jp: *kuikae*) forbids a player from calling an opponent's discard and then cutting any tile from their hand that could complete the joint that they called the tile into in the same turn. So, for example, cutting  after calling  is not allowed.

I've prepared five example problems which need one pinzu discard to get to tenpai. In order to prepare to swap  into our hand in case our left player discards it, which tile should we cut?

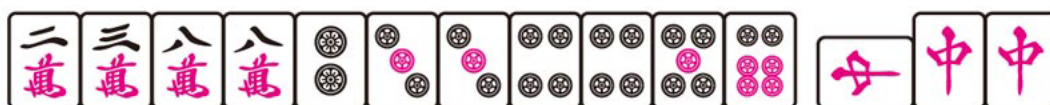
Prob. A



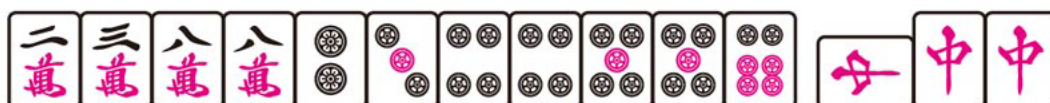
Prob. B



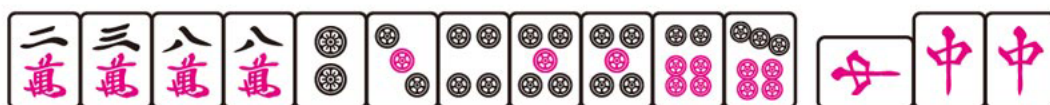
Prob. C



Prob. D



Prob. E



To make a legal swap call and cut after calling , we need to ensure that:

1. We don't call into (instead, call into or),
2. After calling , we can cut the suji (i.e., preserve the suji),
3. After calling, we still have (i.e., only keep one).

Starting from **Problem A**, the correct answers are to cut , , , , and .

Info

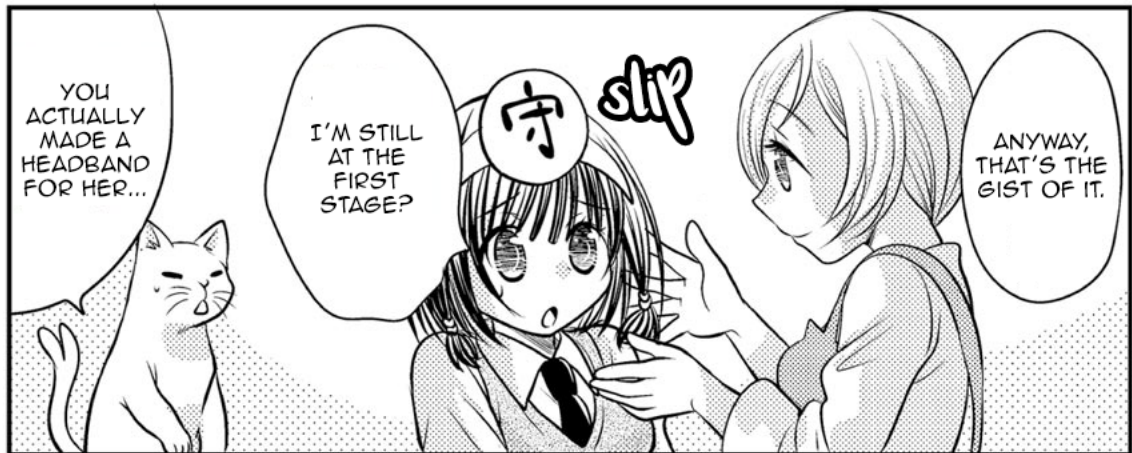
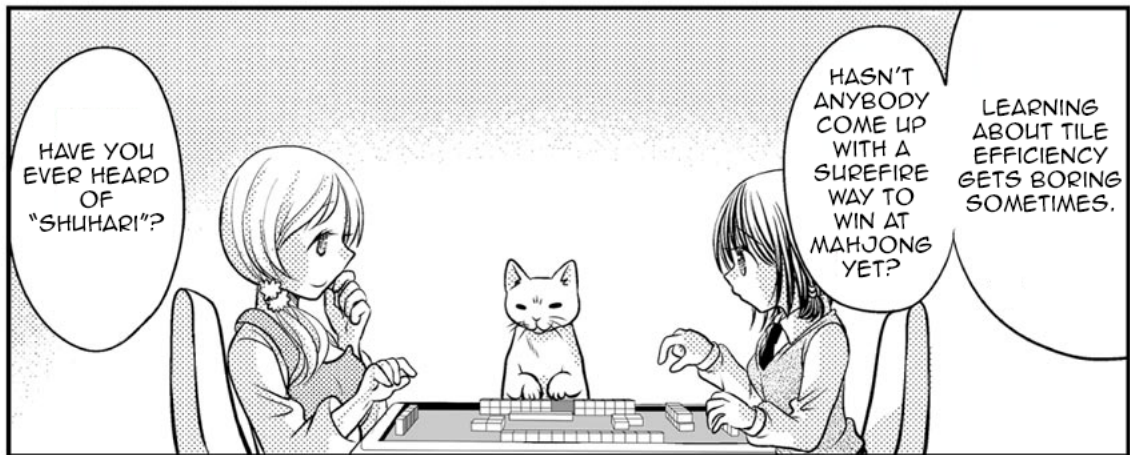
If you have in your hand and chii into , cutting in the same turn is not allowed. The reasoning behind this is that players shouldn't be allowed to slide a completed meld to another completed meld off a call, as this doesn't accomplish anything. But in other versions of mahjong, this rule is sometimes not applied.

Point

Prepare your hand to make legal swap calls in case your left player discards red fives.

Answers





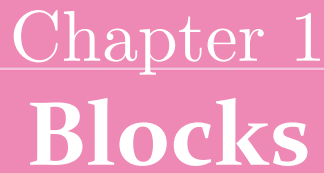
Chapter 8

Problem Index

Here you will find all of the example problems
I've provided in this book.
Use them to hone your mahjong skills!



- All labels include the lesson number and specify the problem in the lesson.
Example: Lesson 03, Problem B -> Q03_B
- Most problems follow the format of typical WWYDs, but some Chapter 5 problems test wait recognition.
- Except for a few problems, most do not provide the turn number. Assume that all of your other opponents have normal discards and that nobody is at or close to tenpai.
- If you'd like to have a turn number for these problems anyway, imagine that you are the west player, at turn seven for 1-shanten hands, and turn four at 2-shanten hands.



➔ **P009**



➔ **P010**



➔ P011



➔ P012



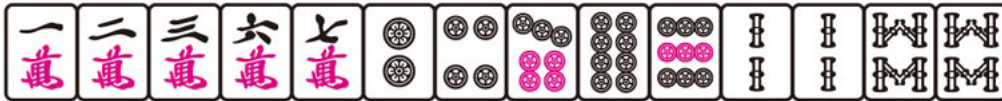


Chapter 2

Heads

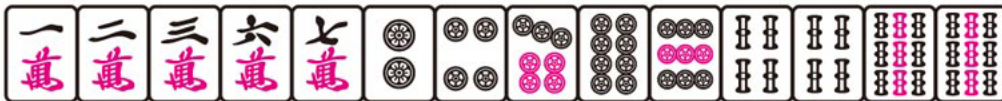
Q 11_A

→ P030



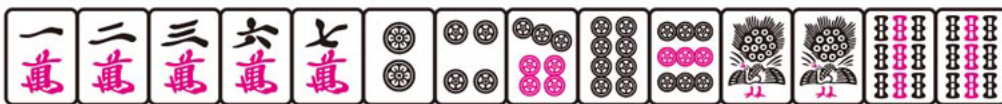
Q 12_A

→ P032



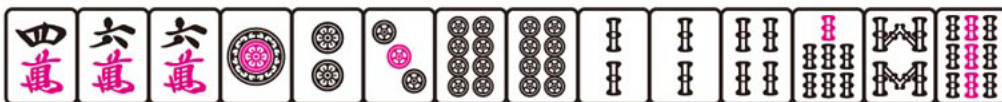
Q 12_B

→ P033



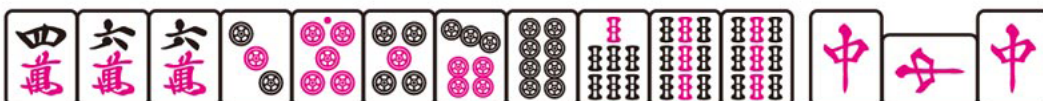
Q 13_A

→ P034



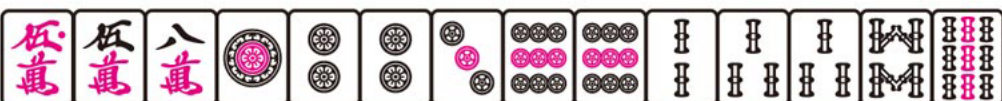
Q 14_A

→ P036



Q 15_A

→ P038



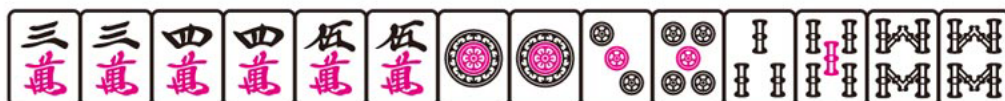
Q 15_B

→ P038



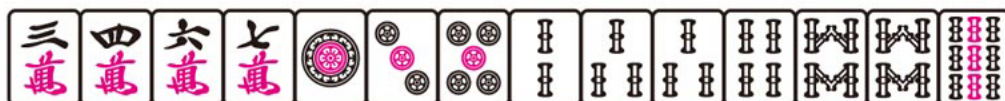
Q 15_C

→ P039



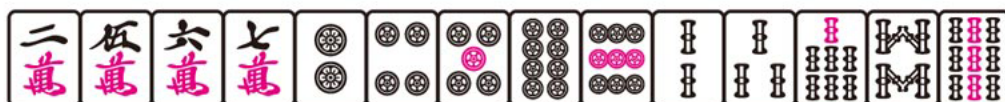
Q 16_A

→ P040



Q 17_A

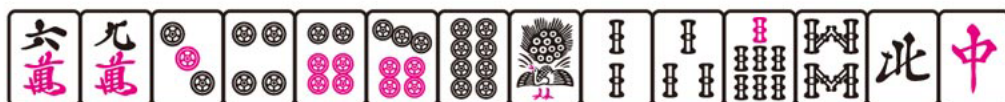
→ P042



Q 17_B

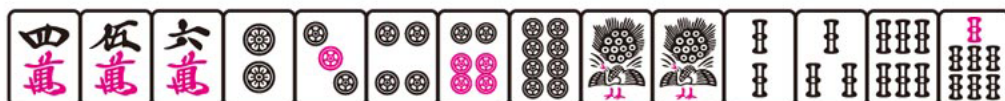
[West Player, Turn 1]

→ P043



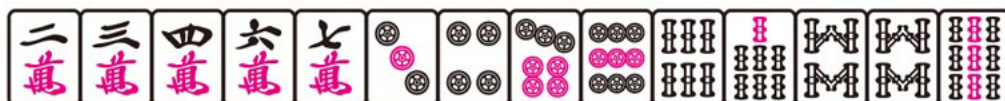
Q 18_A

→ P044



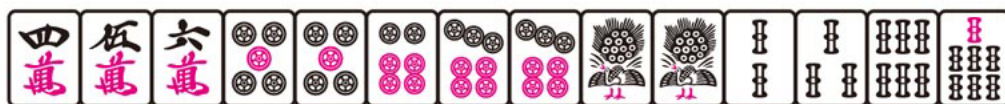
Q 18_B

→ P044



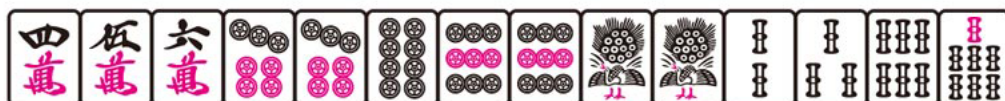
Q 18_C

➔ P045



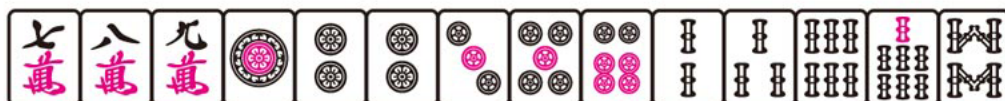
Q 18_D

➔ P045



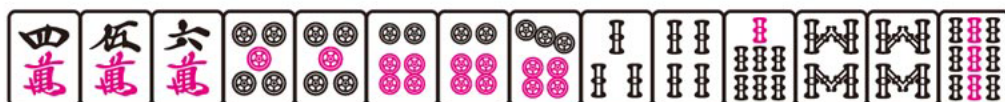
Q 19_A

➔ P046



Q 23_A

➔ P054



Chapter 3

Joints

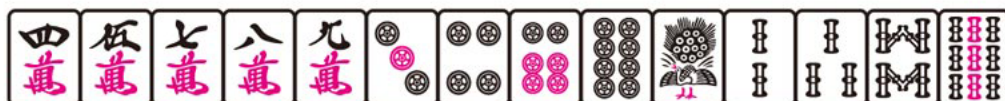
Q 24_A

➔ **P058**



Q 24_B

➔ **P059**



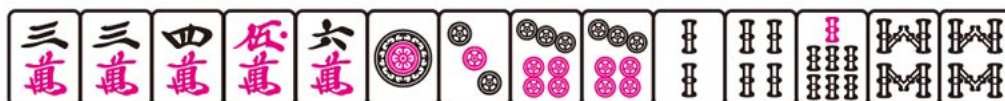
Q 25_A

→ P060



Q 25_B

→ P060



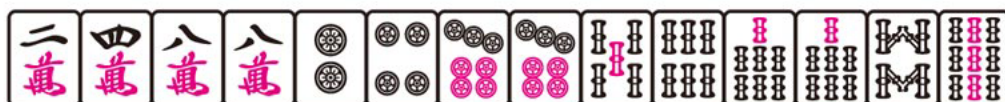
Q 25_C

→ P061



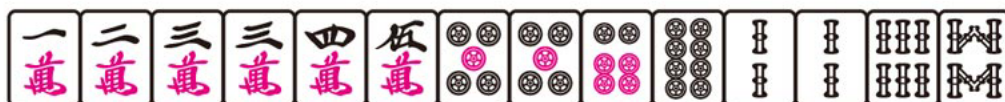
Q 26_A

→ P062



Q 26_B

→ P063



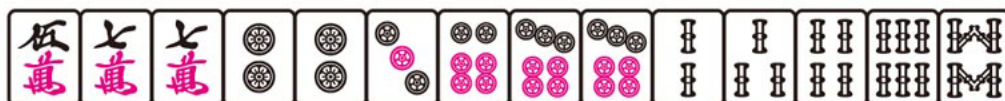
Q 27_A

→ P064



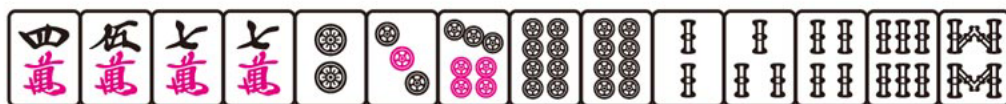
Q 29_A

→ P068



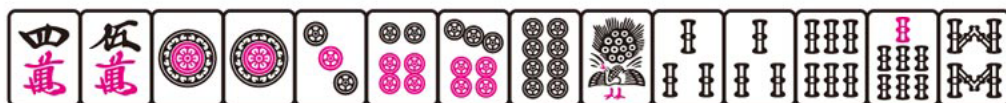
Q 29_B

→ P069



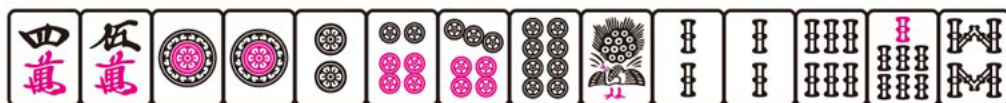
Q 30_A

→ P070



Q 30_B

→ P070



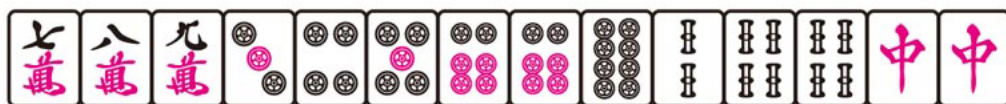
Q 30_C

→ P071



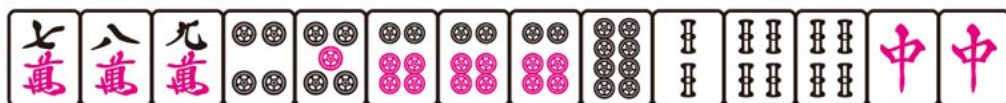
Q 31_A

→ P072



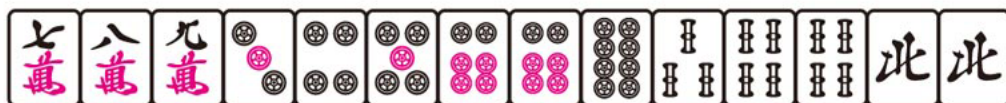
Q 31_B

→ P073



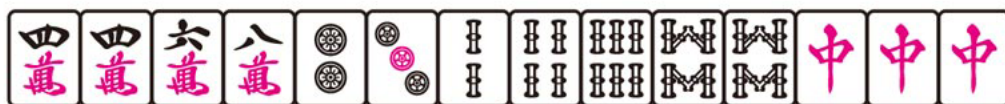
Q 32_A

→ P074



Q 32_B

→ P074



Q 32_C

→ P075



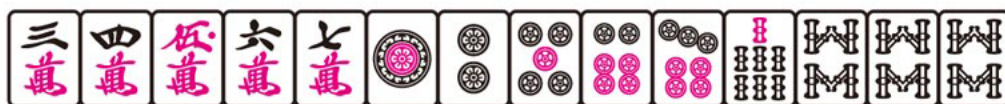
Q 33_A

→ P076



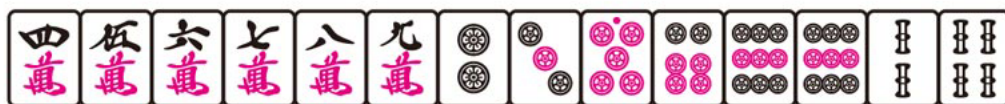
Q 33_B

→ P076



Q 33_C

→ P077



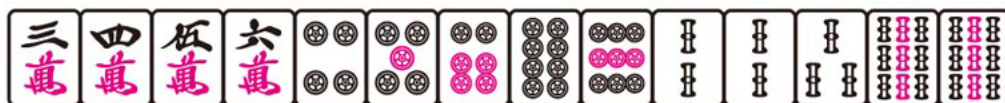
Q 33_D

→ P077



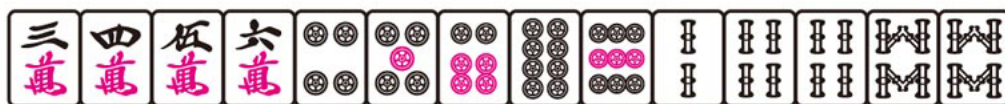
Q 34_A

→ P078



Q 34_B

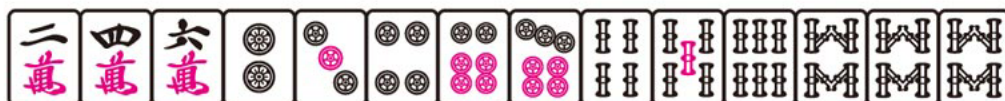
→ P078



Chapter 4 Complex Shapes

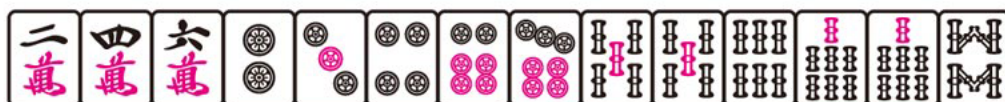
Q 36_A

→ P084



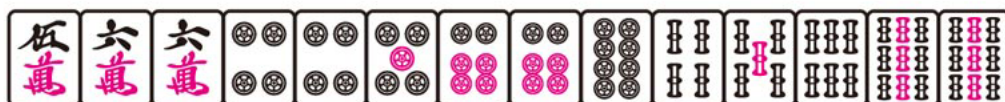
Q 36_B

→ P085



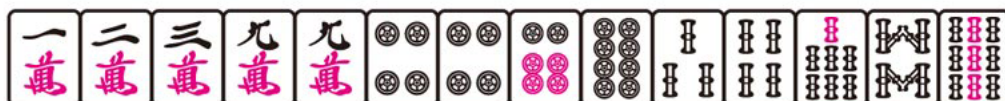
Q 36_C

→ P085



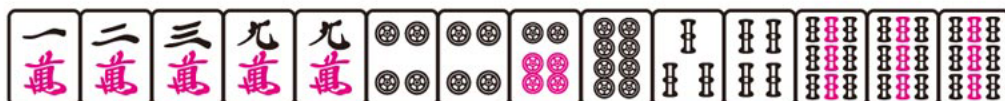
Q 37_A

→ P086



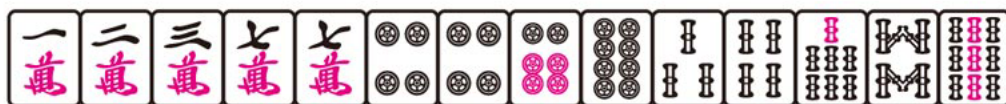
Q 37_B

→ P087



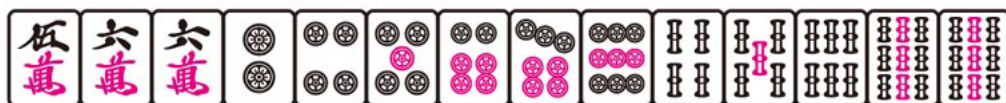
Q 38_A

→ P088



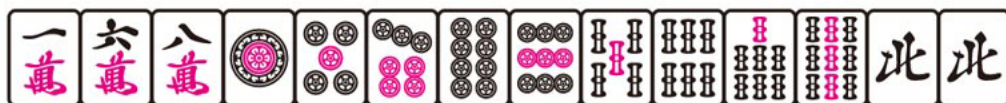
Q 38_B

→ P089



Q 39_A

→ P090



Q 39_B

→ P090



Q 39_C

→ P091



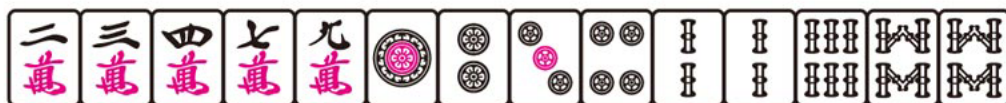
Q 40_A

→ P092



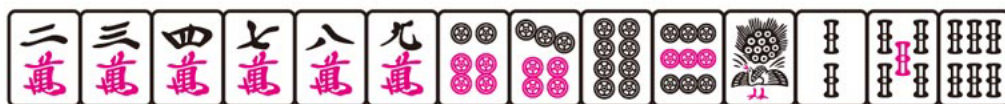
Q 40_B

→ P092



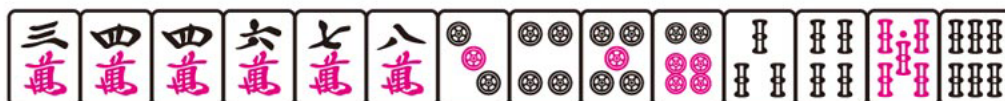
Q 40_C

→ P093



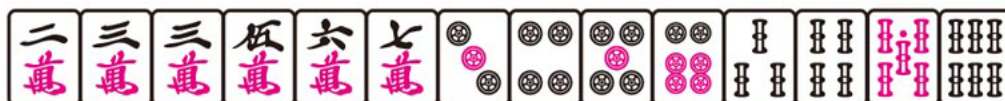
Q 41_A

→ P094



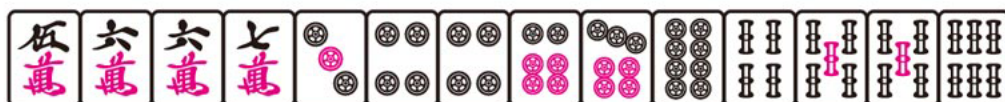
Q 41_B

→ P095



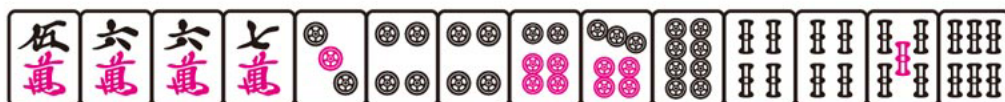
Q 42_A

→ P096



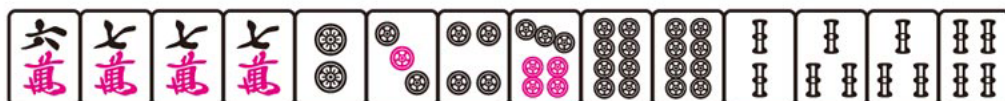
Q 42_B

→ P097



Q 43_A

→ P098



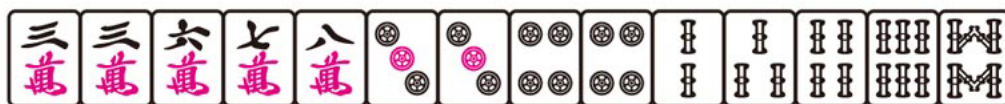
Q 43_B

→ P099



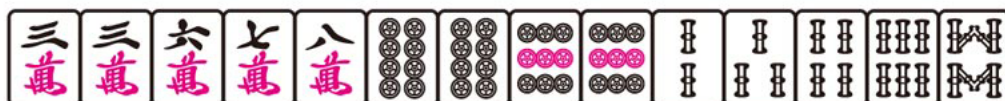
Q 49_B

→ P112



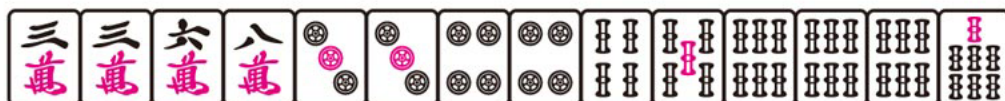
Q 49_C

→ P113



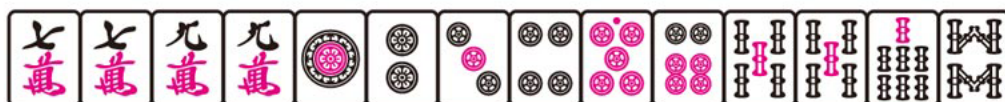
Q 49_D

→ P113



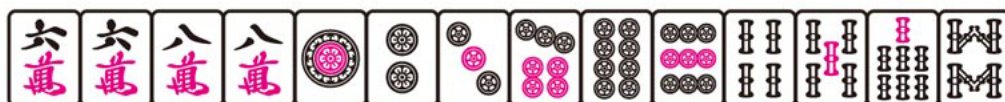
Q 50_A

→ P114



Q 50_B

→ P115



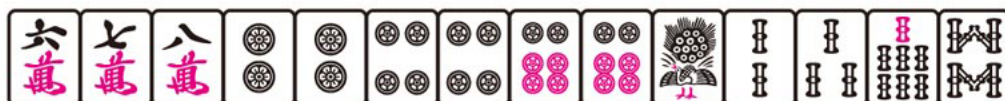
Q 50_C

→ P115



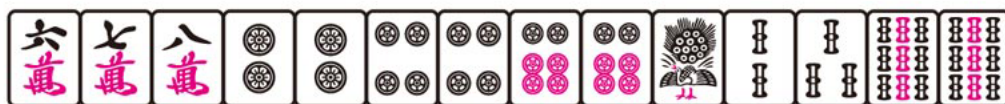
Q 51_A

→ P116



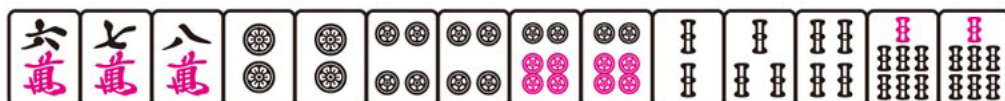
Q 51_B

→ P116



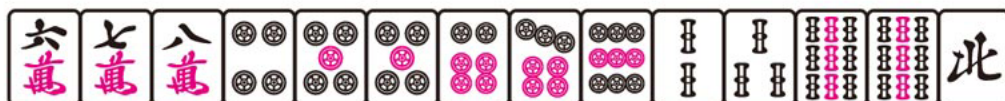
Q 51_C

→ P117



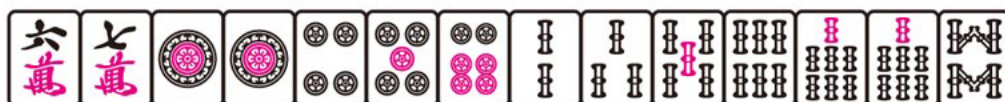
Q 52_A

→ P118



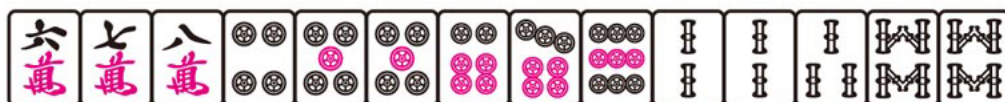
Q 52_B

→ P118



Q 52_C

→ P119



Q 53_A

[East Player, Turn 11]

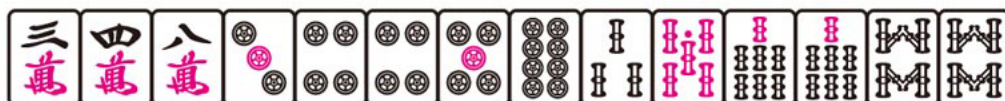


→ P120



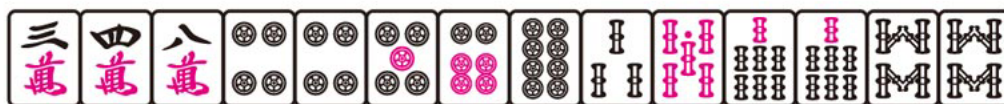
Q 54_A

→ P122



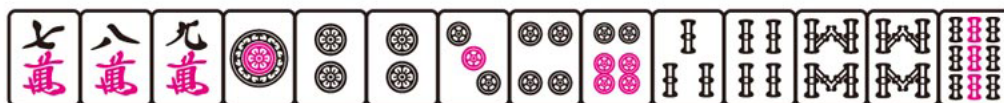
Q 54_B

→ P122



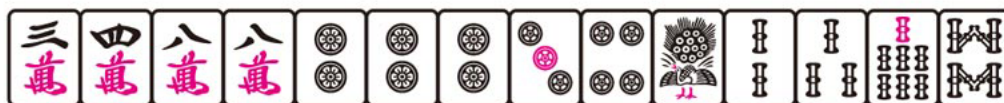
Q 54_C

→ P123



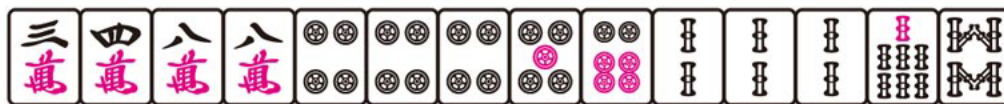
Q 57_A

→ P130



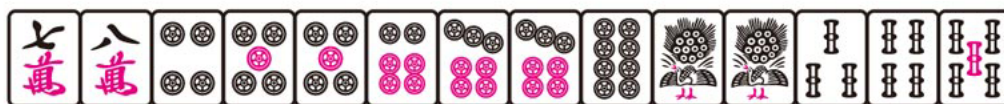
Q 57_B

→ P131



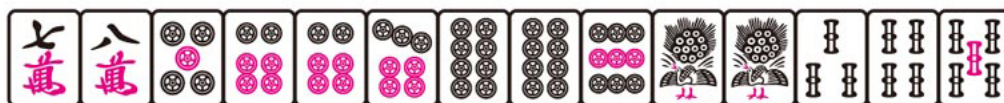
Q 58_A

→ P132



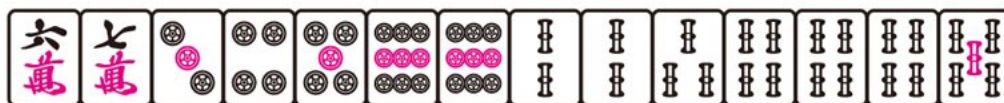
Q 58_B

→ P132



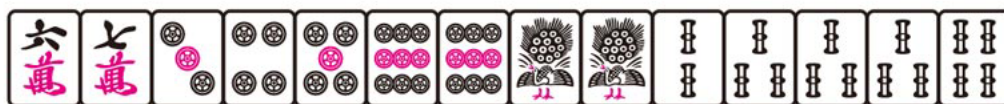
Q 58_C

→ P133



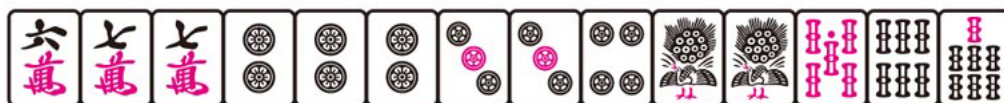
Q 58_D

→ P133



Q 59_A

→ P134



Q 59_B

→ P134



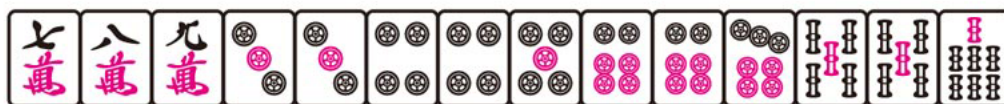
Q 59_C

→ P135



Q 60_A

→ P136



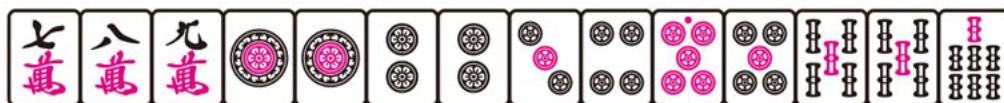
Q 60_B

→ P136



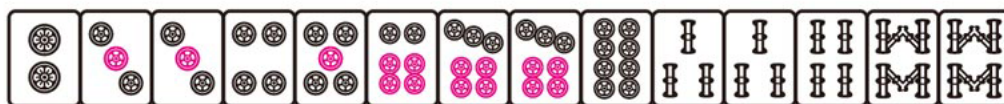
Q 60_C

→ P137



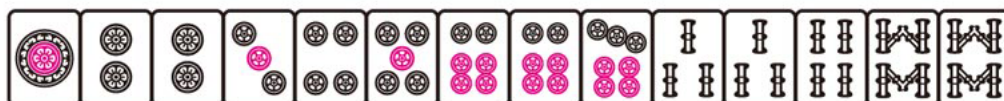
Q 61_A

→ P138



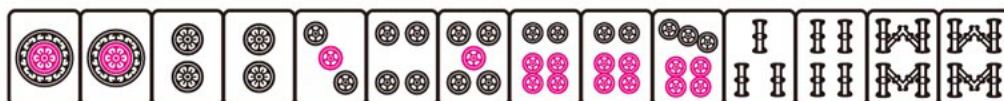
Q 61_B

→ P138



Q 61_C

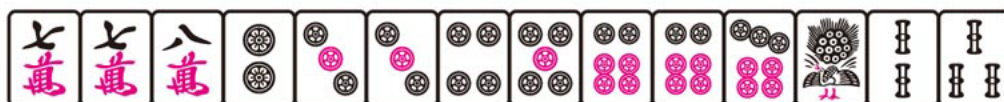
→ P139



Q 62_A

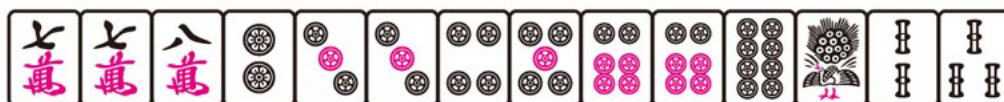
[Turn 4]

→ P140



Q 62_B

→ P141



Chapter 5

Knowing Your Acceptance

Q 63_A

How many tiles, and in which kinds, get this hand to tenpai?

→ P144



Q 63_B

How many tiles, and in which kinds, get this hand to tenpai?

→ P145

**Q 63_C**

How many tiles, and in which kinds, get this hand to tenpai?

→ P145

**Q 64_A**

→ P146

**Q 67_A**

→ P152

**Q 67_B**

→ P152

**Q 67_C**

→ P153

**Q 68_A**

→ P154



Q 69_A

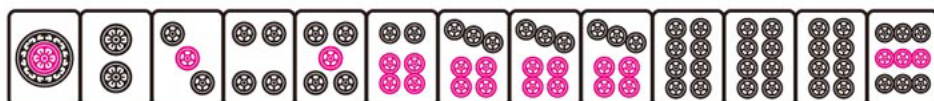
Find this hand's waits.

→ P156

**Q 69_B**

Find this hand's waits.

→ P157

**Q 70_A**

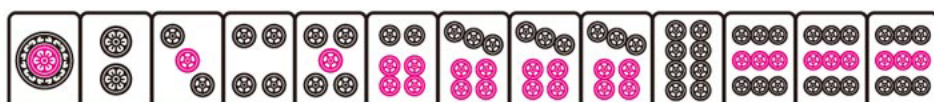
Find this hand's waits.

→ P158

**Q 70_B**

Find this hand's waits.

→ P159

**Q 71_A**

Find this hand's waits.

→ P160

**Q 71_B**

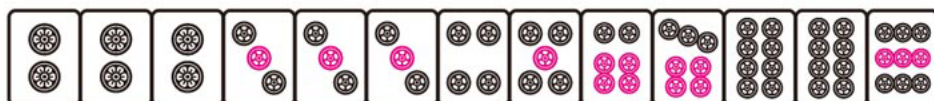
Find this hand's waits.

→ P160

**Q 71_C**

Find this hand's waits.

→ P161



Q 72_A

Find this hand's waits.

→ P162

**Q 72_B**

Find this hand's waits.

→ P163

**HW_A**

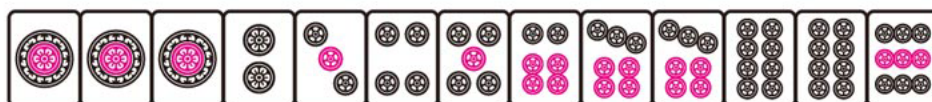
Find this hand's waits.

→ P164

**HW_B**

Find this hand's waits.

→ P164

**HW_C**

Find this hand's waits.

→ P164

**HW_D**

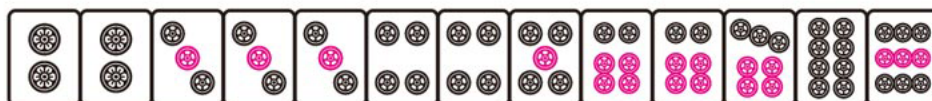
Find this hand's waits.

→ P164

**HW_E**

Find this hand's waits.

→ P164

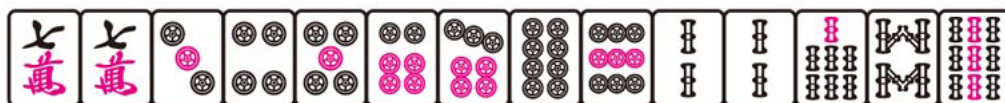




Chapter 6 Techniques

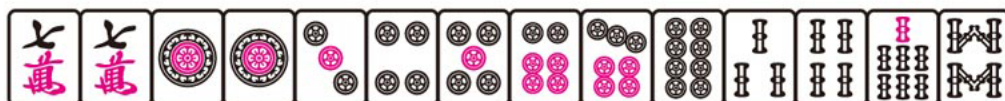
Q 73_A

→ P168



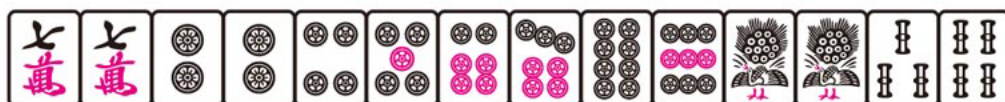
Q 73_B

→ P168



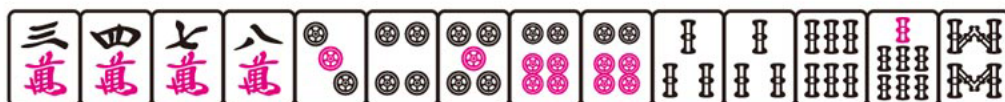
Q 73_C

→ P169



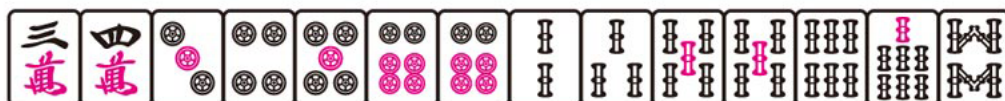
Q 74_A

→ P170



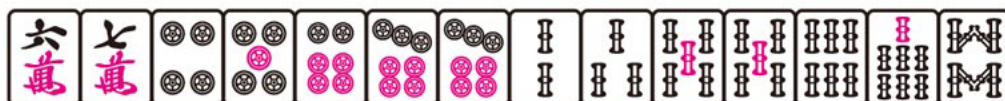
Q 75_A

→ P172



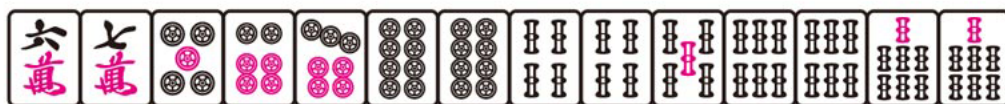
Q 75_B

→ P173



Q 75_C

→ P173



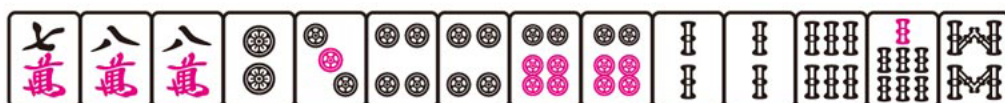
Q 76_A

→ P174



Q 76_B

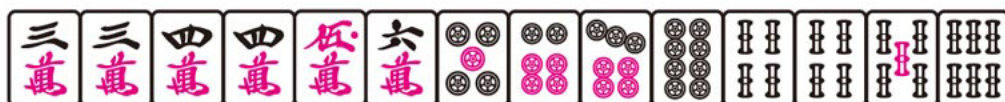
→ P175



Q 77_A

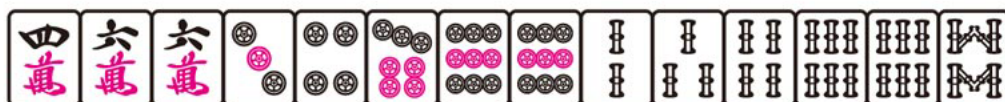
[Turn 5]

→ P176



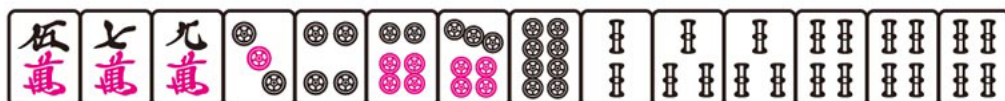
Q 78_A

→ P178



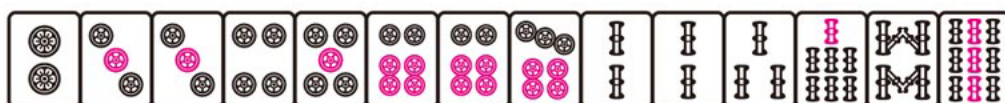
Q 78_B

→ P179



Q 79_A

→ P180





[Agari-top]

➡ P184



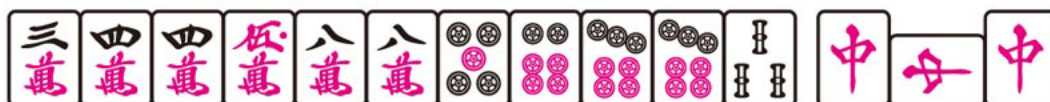
[Agari-top]

➡ P184

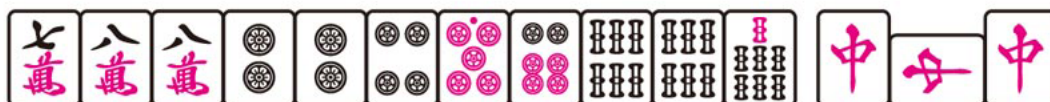


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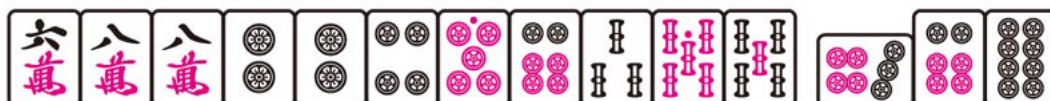
➡ P186



➡ P188

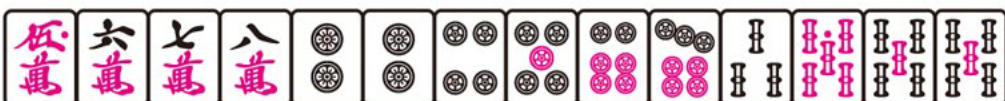


➔ **P190**

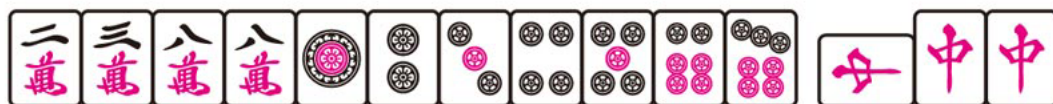


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➡ P193



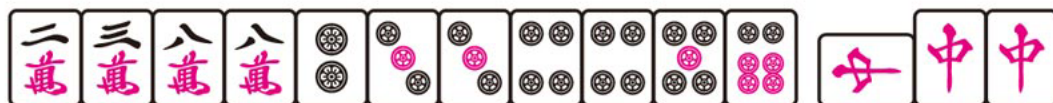
➔ P194



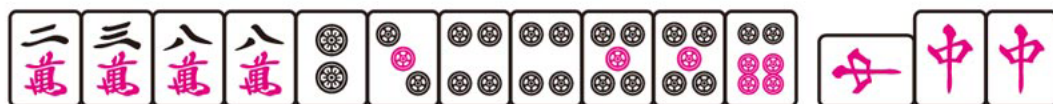
➔ P194



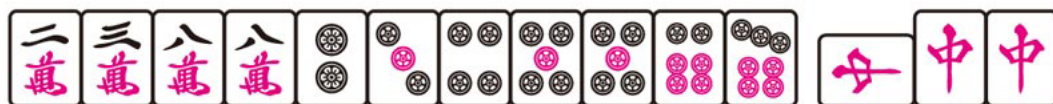
➔ P195



➔ P195



➔ P195



Want to test your newly acquired tile efficiency knowledge on some more of my problems? Check out my other books in the *Nani Kiru?* series! Try your mahjong sense on advanced problems in *Mahjong Kessaku Nanikiru 300sen*, or brush up on fundamentals with *Mahjong Joseki Nanikiru 301sen*. Both just 1200 yen + tax. Up your mahjong skills today!



About the Term “Tile Efficiency”...

Mahjong terminology changes with time, and the words don't always mean exactly what they used to. “Tile efficiency” is one of those terms.

Broadly speaking, tile efficiency refers to the ability of a player to build their hand in an efficient manner, and you'd be hard-pressed to find a solid definition any more detailed than this. The question is, does tile efficiency mean cutting whatever leads to the most tile acceptance?

Instead of trying to scrutinize the origin of this term, let's take a different approach and look at the meaning of the words themselves. The word “efficiency” as defined by *Merriam Webster* is as follows:

1. the ratio of the energy delivered by a dynamic system to the energy consumed.
// efficient machinery, thermal efficiency
2. effective operation as measured by a comparison of production with cost (as in energy, time, and money)
// an efficient investment

The first image that pops up in your mind when you see this definition is probably something like a car's fuel consumption, right? Pretty far off from tile acceptance. In mahjong, the choice that yields the most tile acceptance is not necessarily the one that will bring you to tenpai or get you to win the fastest. My point is, we didn't always know that.

The way we use words changes with time. Now, I'm not trying

to declare that you're all using the term "tile efficiency" wrong and that you should change your ways. But the way I see it, tile efficiency does not simply mean the choice that leads to the most tile acceptance.

Tile efficiency often gets lumped in together with "tile theory" (jp: *pairi*), but the origin of this term is well-known. For those that are curious, search up "combinatorial theory in mahjong" (jp: *hai no suurikinou*).

G Uzaku, March 2019

All problems in this book were written by G Uzaku. Quality control was conducted by Nemata, Yuuse, and JangoroK.

The book you're reading could not have been made possible without the help of all these other people, who I will now have the pleasure of introducing. I extend a deep, sincere "thank you" to all who have been involved.

Nemata: Practicing monk. Dropped out of the Graduate School of Humanities and Sociology and Faculty of Letters at the University of Tokyo. Writes for a column at the Mahjong Watch website. Author of several mahjong books, including *Riichi Mahjong Strategy*.

Yuuse: Cram school instructor and mahjong parlor employee. Charisma King of the Tenhou community. Author of *Jissen de Yoku Deru! Yomu dake de Kateru Mahjong Kougi*.

JangoroK: Owner of Mahjong Bucks. Author of several mahjong books, including *Chou Jissen Mahjong Nani Kiru* and *Nani Naku Drill*.

Mahjong Bucks: yutorisuzume, norichan, ideccho, nakagawakun, eesan, and gennokun

Toutenkou at Meitetsu Chiryuu Station: the staff

"Uzaku's Guide to Mahjong" is an educational mahjong resource developed by G Uzaku.

[著者] G・ウザク

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Answer



表紙の問題の
答えはこれ！
詳しい解説は
P72へ

