Section 2. Check "Green Book"!

"Green Book" is a collection of rules and regulations for playing mahjong under "Mahjong Competition Rules" (MCR). This section contains mysteries referring to a wide range of rules from "Green Book".

Contents

2-1. Sherlock Holmes in Buckingham Palace

Recently, an event one can only dream of, happened. The great detective Sherlock Holmes was invited to an audience with the Queen in Buckingham Palace in recognition of his hard work.

Great excitement was caused by the news that the Queen had heard about the new game of mahjong. So Holmes, together with Dr. Watson, Inspector Lestrade, and diplomatic officer Wan Dongtiao, came to the palace to arrange for a presentation of this game at the reception.

Dialogues

Let's review some highlights of conversation from the reception. These were carefully recorded to phonograph by Mahjong News reporter Mr. Martin.

"The Queen, dressed all in green, arrived by a carriage drawn by seven pairs of horses. These were not just simple horses, but all purebreds."

"The Ministerial Office consists of twelve persons headed by the Prime Minister. Each of these persons has no relatives due to the time it took to complete the special training to become statesmen."

"The grounds of Buckingham Palace have exactly nine gates. The upper four floors of the main building are constructed in Eastern style, the lower four in European. In the garden, amidst all types of flowers, is a cage containing three lizards called little three dragons."

"Could you break a 100-pound bill into 20's? No, I have only all fives in my purse."

Later on during the game, reporter Martin noticed that some mahjong declarations **fully coincided** with remarks at the reception.

Question: Please, name all fans that could be deciphered from conversation during the reception.

Hint
Solution

2-2. 88 Points from Scratch

At 221B Baker Street, there is a discussion of high-scoring fans.
"You see, one cannot declare all seven existing 88 points fans from the very start of the deal," said Holmes.
"Surely, you cannot declare Four Kongs without replacing four tiles from the wall."
"There is one more fan," remarked Holmes.

Question: Which 88 points fan beside Four Kongs East cannot be declared from the very start of the deal?

Hint
Solution

2-3. Absent-Minded Mrs. Hudson

During morning coffee, Sherlock Holmes and Dr. Watson are reading "Mahjong News" on their tablets about the recently held MCR Championship of London.

"The championship took place without any incidents," reads Watson, "not counting two appeals from Mrs. Hudson, who was able to get first place! Remarkably, both appeals relate

to the same rule; paragraph 1.9. of MERS Tournament Regulations - Mahjong Competition Rules." After Mrs. Hudson's convincing arguments, the judge ruled both times in her favour.

"Watson," Holmes remarked, puffing on his pipe. "Isn't that the paragraph about placing the winning tile into the hand?"
"Quite right," confirmed Dr. Watson. "And here is a quote of that rule":

"1.9. Clearly show your winning tile, either claimed or self-drawn. Failing to do so results in not being allowed to claim points for Single Wait, Edge Wait, Closed Wait, Last Tile and Nine Gates."

Question: Please, explain how Mrs. Hudson was able to convince a judge to allow points on two separate occasions; with two ***different*** fans as listed in rule 1.9, despite her having absent-mindedly violated the rule in question.

Hint
Solution

2-4. Let's Score

Before a traditional game at 221B Baker Street, there is a mahjong class. Mrs. Hudson is asking Sherlock Holmes, "If a complete hand allows multiple ways to score, what is the appropriate way to manage that?"

"According to the "Green Book", after a player declares "Hu", the player should clearly do several things: break the hand into sets with a valid hand structure, indicate clearly which set will be formed with the winning tile, and then score a fan."

"Let's consider an interesting hand. Imagine that the player declares "Hu" on his 10th turn with this hand winning on the discarded . How can one best score this hand? Please note, there are several ways to structure the hand to answer the above-stated question."

Question: Please, provide ***all*** possible variants of scoring this hand's value (list all fan for the relevant structures).

Hint
Solution

2-5. Final Session Duel

By the final session of the London MCR Championship, Professor Moriarty has taken the first position with a tremendous lead of 4 table points and 100 game points above second place, who is Sherlock Holmes. Sherlock can win the championship only under the rarest of circumstances: Sherlock must win his last table, and Moriarty must lose it. Luckily for Holmes, the two meet at the same table. Before the last deal of the session and of the entire championship, a miracle for Sherlock was beginning to take shape. Sherlock (East) has 90, Moriarty (South) has -39, Mrs. Hudson (West) has -21, and Moran (North) has -30 points.

By the middle of a deal, Sherlock is waiting with this hand:

.

Moriarty, on the right, has melded three sets including a dragon pung. The situation is very clear: Sherlock can win from the wall with any hand, from Mrs. Hudson with a hand which scores **no more than** 17 points, or from Moran with a hand which scores **no more than** 8. If Sherlock wins from Moran any more than 8 points, Moriarty will bump up to 3rd place, earning him 1 TP, and winning him the championship. Sherlock's chances to win also include a "Hu" by either Moran or Mrs. Hudson, but only if they win with a small hand.

Mrs. Hudson discards and Moriarty pungs it. Moriarty now has four melded sets with two obvious points, so he can now win on any discard. In two moves, thunder and lightning strike: Moran on the left of Sherlock discards and Moriarty on the right declares "Hu".

"So, the London Championship was won by Moriarty?" asked Watson at home.
"No way," Sherlock replied, showing the Champions Cup.
"But how?"
"Players should know the "Green Book". It is the Bible and the law for the mahjong player."

Question: Please, explain what happened and how Sherlock managed to win the championship?

2-6. Invertebrates

Note: The current mystery was used at the 2nd "Sherlock Holmes and Mahjong" contest in 2015. After the solution was published, the Asian players noticed that the key rule used in the solution is **invalid** under "Green Book". After checking out, it turned out that European version of "Green Book" differs! It was, most probably, due to miscommunication between the center.

The rule under consideration is a possibility to declare Chow / Pung / Kong at the point of the Last Discard (no tiles left in the wall). Readers are advised to solve the current mystery under the above-stated modification.

Before attending her scheduled evening game of mahjong at 221B Baker Street, Mrs. Hudson tried to escape from her daily worries. She went to the nearest library and found an atlas describing the animal kingdom. While browsing this text, she especially liked the section on invertebrates sponges, worms, insects, etc. The time had come to attend her mahjong game, so she closed the book and headed off to her game.

In the first deal of the evening game, Mrs. Hudson's hand stubbornly refused to assemble its tiles into any useful shapes. Mrs. Hudson finally came to draw the last tile from the wall,

which was .

"So, what should I do with it?" she complained. "I do not have in my hand any ready pung, nor a chow, not even a pair of identical tiles. As for honor tiles, the only one I have is just this

one I last drew to be a Green Dragon. For a knitted hand I can count no more than 7 tiles. My hand is shapeless. No, it's spineless. NO! It's an invertebrate!" She liked her finding.

So, Mrs. Hudson discarded , and … something incredible has happened!

Question: Please, reconstruct Mrs. Hudson's hand and explain what has happened provided she won the deal and hand value (not counting "Flowers") is (consider two independent conditions):
condition A. 34+ points,
condition B. 30+ points under the constraint that her hand does not contain any one-suit

two-tile joints like .

Hint
Solution

Hints

2-1. Sherlock Holmes in Buckingham Palace

Read the text.

Solution

2-2. 88 Points from Scratch

Which 88 points fan requires a wait?

Solution

2-3. Absent-Minded Mrs. Hudson

Any tile in the concealed portion of Mrs. Hudson's hand meets the requirements for the fan under consideration.

Solution

2-4. Let's Score

Please:
- break hand into sets with valid a hand structure
- indicate clearly which set will be formed with the winning tile
- score fans

Repeat the process for as many times as the hand allows.

Solution

2-5. Final Session Duel

One is free to choose fans which add up to exactly eight points.

Solution

2-6. Invertebrates

Which conditions allow Mrs. Hudson to build her hand?

Solution

Solutions

2-1. Sherlock Holmes in Buckingham Palace

Here is a list of deciphered fans:
- All Green
- Seven Pairs
- Pure Suit
- Thirteen Orphans
- Nine Gates
- Upper Four
- Lower Four
- All Types
- Flower Tiles
- Little Three Dragons
- All Fives

2-2. 88 Points from Scratch

When tiles are dealt from the wall, East receives fourteen tiles as-a-bundle having no opportunity to separate them. For the fan #4 Nine Gates a player, in order to show a 9-sided wait, must have only thirteen tiles and the 14th should come from *outside* the hand. Since East has fourteen tiles, Nine Gates cannot be declared during East's initial move.

2-3. Absent-Minded Mrs. Hudson

The basic idea of this solution is that despite the fact that Mrs. Hudson had placed the winning tile into her hand, it wouldn't have mattered which tile was her winning tile since *any* tile in the concealed portion of her hand could meet the necessary condition for the fan under consideration. This approach may seem controversial and dubious if you follow the letter of the "Regulations". The judge, however, ruled in favor of Mrs. Hudson. So, what might these two fans be?

It is obvious that fans like Closed Wait and Edge Wait are not the case because among the three tiles of the chow there is at least one tile which would never meet criteria for the one point wait. Also, a Nine Gates fan cannot be considered because it contains nine different suit tiles, eight of which could not meet the criteria for that fan.

So, in the first appeal, Mrs. Hudson had four melded pungs, and a tile was taken from the wall to make a pair and declare "Hu". Despite the fact that she did not clearly show which tile she picked, she was able to convince the judge that *there is no difference* which of the two *identical* tiles she put into her hand, so the fan was counted.

In the second appeal, Mrs. Hudson announced mahjong on a knitted hand (Honors and Knitted Tiles), putting the winning tile into her hand. During the scoring procedure, she attempted to score points for the fan Last Tile. Fan description says: "Winning on a tile that is the last of its kind. It must be clear to all players based on the discards and exposures."

Her opponents argued that she could not do this because it is *impossible* to determine which tile to apply the fan Last Tile to.

Unbelievably, it turns out that for *any* of the fourteen tiles in Mrs. Hudson's hand, there were three copies of that same tile on the table amongst discards and melded sets! The judge again ruled in favor of Mrs. Hudson, since it wouldn't matter which of her fourteen tiles was the last since all of them were the last of its kind.

Here is an example of how the hand may have worked out for the second appeal. Mrs. Hudson is sitting as North, and her starting hand was almost a completed knitted hand (twelve tiles are ready): 🔒 發 發 中 ⬜ 東 南 西 北 一萬 四萬 七萬 🔵 🔴 .

East discards ▯, a useful tile to complete Mrs. Hudson's hand. South and West, in turn, discard the same tile. Mrs. Hudson takes 🀫 into her hand and then after discarding 發 she is waiting! Suddenly, a "pangonade" occurs – a cannonade of declared pungs breaks out.

East declares "Pung!" and discards 中 . South declares "Pung!" and discards ⬜ . West declares "Pung!" and discards 東 . East declares "Pung!" and discards 南 . South declares "Pung!" and discards 西 . West declares "Pung!" and discards 一萬 . East declares "Pung!" and discards 四萬 . South declares "Pung!" and discards 七萬 . West declares "Pung!" and discards 🔵 . South declares "Pung!" and discards 🔴 . West declares "Pung!" and discards 🀫 . East declares "Pung!" and discards 北 . South discards 北 . West discards 北 . Mrs. Hudson draws the 4th ▯ from the wall, places it into her hand and then declares "Hu!"

In fact, out of the fourteen different tiles in Mrs. Hudson's hand, one can find twelve examples where there are three copies of those tiles in the form of melded pungs, and two examples where there are three copies of those tiles in the discard pool.

2-4. Let's Score

Scoring hand value depends solely on the decision of the player to break the hand into sets, as well as on the placing of the winning tile to some set. First of all, please, note that three group fans can be applied regardless of breaking into the sets:

- 24 = fan #22 Full Flush
- 12 = fan #37 Lower Four

- 8 = fan #40 Reversible Tiles

Total: 24+12+8=44 points.

Variant 1. — Seven Pairs structure:
- 24 = fan #19 Seven Pairs
- 2*3 = fan #64 Tile Hog (three times)

Total: 44+24+6=74 points.

Variant 2.
- 48 = fan #14 Quadruple Chow
- 2 = fan #63 All Chows
- 2 = fan #62 Concealed Hand

Total: 44+48+2+2=96 points.

Variant 3.
- 24 = fan #24 Pure Shifted Pungs
- 16 = fan #33 Three Concealed Pungs
- 2*3 = fan #64 Tile Hog (three times)
- 2 = fan #62 Concealed Hand
- 1 = fan #73 Pung of Terminals or Honors

Total: 44+24+16+6+2+1=93 points.

Variant 4.
- 24 = fan #24 Pure Shifted Pungs
- 2*3 = fan #64 Tile Hog (three times)
- 2 = fan #66 Two Concealed Pungs
- 2 = fan #62 Concealed Hand
- 1 = fan #73 Pung of Terminals or Honors

Total: 44+24+6+2+2+1=79 points.

Variant 5. or
- 2*3 = fan #64 Tile Hog (three times)
- 2 = fan #63 All Chows
- 2 = fan #62 Concealed Hand
- 1*2 = fan #69 Pure Double Chow (two times)

Total: 44+6+2+2+2=56 points.

2-5. Final Session Duel

Obviously, Holmes can not miss Moran's discard of , since Moriarty's hand has at least eight points for mahjong (two points for a dragon pung and six points for a melded hand). At the same time, Holmes needs to declare mahjong exactly for eight points to win the table and the cup.

Sherlock declares "Hu", takes discard and start to count with discarded tiles *including* four of his own Flowers:

- 2 = Concealed Hand
- 2 = All Chows
- 1 = Short Straight (+)
- 1 = Two Terminal Chows (+)
- 1 = Mixed Double Chow (+)
- 1 = Closed Wait

Totaling 2+2+1+1+1+1=8 points.

"But wait!" shouted Moran. "Why didn't you score Pure Straight? And what did you do with your Flowers?"
"Calm down, he is right," said Moriarty. "He acts on the basis of 'Green Book'".

"Green Book"

"Green Book" has several rules on how the hand is scored. Sherlock simply used them to his advantage.

Firstly, a hand is scored not by the judge, and not by the table (by all four players like in riichi) but *solely* by the player. `The player himself must declare points (adding up the Fan Points of his hand). Then the other players may check, and the referee verifies.' This means that nobody can interfere with the player.
Secondly, whenever there is a choice, the player can choose. In p.3.9.1.6 (4) it reads: `(4) Freedom to Choose the Highest Points ("the High-versus-Low Principle")：If you can use a set to form both a high-score fan and a low-score fan, it is your right to choose the high-score fan.'

For this once in a lifetime event, from amongst all of the players, the winner has decided to choose low-scoring fans. Finally, tiles from the hand are used for counting, this constitutes a foul. If Flower tiles are used, then the hand remains, but the player forfeits the points for the flower tiles that were used for scoring.

P.S. This mystery is based on real-life play at the MCR Russian Open 2015.

2-6. Invertebrates

Mrs. Hudson has no pairs, and her hand is not waiting for any knitted fans, so we know that whatever happens for her hand, she must make calls for chows until she is ready for hu. To this end, the player to her left must be the one to continue to make further discards in order for Mrs. Hudson to claim his discards for chows. In order for the person to her left to have a new discard, he too, then, must at some point claim a discard. 5 times Mrs. Hudson will discard and 5 times she will also claim. Any of Mrs. Hudson's discarded tile must be taken either for a pung immediately by the player to her left, or, alternatively, by any other player with the chains of discards-and-claims finishing at the player to her left.

Mrs. Hudson's winning hand definitely would contain the following three fans:
- 8 = Last Tile Claim
- 6 = Melded Hand
- 2 = All Chows

Totaling = 16 points.

In order to produce 30+ pts. in total her hand should contain 16-point fan (24-point, 12-point or 8-point would not work, reader may check it!), that 16-point fan may be one of the list:
- Pure Straight
- Three-Suited Terminal Chows
- All Fives

Let's show three solutions based on three listed 16-pts. fans.

Condition A1. Pure Straight

Starting hand (having four one-suit two-tile joints converted finally to chows):

Final Hand:

- 16 = Pure Straight
- 8 = Last Tile Claim
- 6 = Melded Hand
- 2 = All Chows
- 1 = Mixed Double Chow

- 1 = One Voided Suit

Totaling = 34 points.

Condition A2. All Fives

Starting hand (having four one-suit two-tile joints converted finally to chows):

.

Final Hand:

:

- 16 = All Fives
- 8 = Last Tile Claim
- 6 = Melded Hand
- 2 = All Chows
- 1*2 = Mixed Double Chow (twice)

Totaling = 34 points.

Condition B. Three-Suited Terminal Chows

Starting hand (having none of one-suit two-tile joints):

.

Final Hand:

:

- 16 = Three-Suited Terminal Chows
- 8 = Last Tile Claim
- 6 = Melded Hand

Totaling = 30 points.