



What would a trip to Vegas be without a little gambling? You sit down at the blackjack table and play a few hands. You have a sneaking suspicion that the deck is stacked against you, but what can you do?

This puzzle involves the deck of cards that you received with your information pack for Las Vegas. If you did not receive a deck of cards, please return to the information center to request a deck. Under **no** circumstances should you shuffle or otherwise reorder the cards, unless the puzzle instructs you to do so.

To solve this puzzle, you must learn to deal and score hands in blackjack. You will be dealing blackjack for **three** players, plus the dealer. The goal of blackjack is for the value of a player's hand to exceed the dealer's, **without** exceeding 21. The value of a hand is the sum of the values of its cards. The value of each card is as follows: 2 through 10 are worth face value; jacks, queens, and kings are worth 10 points each; aces are worth 1 or 11 points, whichever is most beneficial.

To deal a set of hands in blackjack, follow these instructions:

1. "**Burn**" (i.e., discard) the top card in the deck.
2. Deal one card face-up to each player in turn.
3. Deal one card face-up to the dealer.
4. Deal a second card face-up to each player in turn.
5. Deal one card face-down to the dealer.
6. Each player, starting with the first player, may "**hit**" (request one or more additional cards, one at a time) or "**stand**" (request no cards). If a player hits, deal that player one card at a time until they either stand or "**bust**" (have a hand whose value exceeds 21). Do not deal additional cards to a subsequent player until the current player either stands or busts.
7. Once all the players have received additional cards as requested, the dealer reveals the face-down card. If all the players have busted, no more cards are dealt, all the players lose, and the hand is over.
8. If there is at least one player who has not busted, the dealer takes zero or more additional cards, according to the following rules:
 - a. If the dealer's total is less than 17, they always hit, repeating as necessary.
 - b. If the dealer's total is between 17 and 21 points inclusive, they stand. Every remaining player whose total exceeds the dealer's wins that hand.
 - c. If the dealer's total exceeds 21, the dealer busts, and all remaining players win that hand.

Note: these rules do not include splitting, doubling down, or other special cases in blackjack, in case you are familiar with those rules. For these rules, "hit" and "stand" are the only options. Also note that the dealer stands on **all** hands worth 17 to 21, including "**soft**" hands (i.e., hands with an ace worth 11 points).

Now that you know how to be a blackjack dealer, let's play. There are three players at this particular table, plus the dealer. The players don't know much about blackjack strategy, so each of them simply plays as though they were the dealer: hit if their total is below 17, and stand if their total is between 17 and 21.

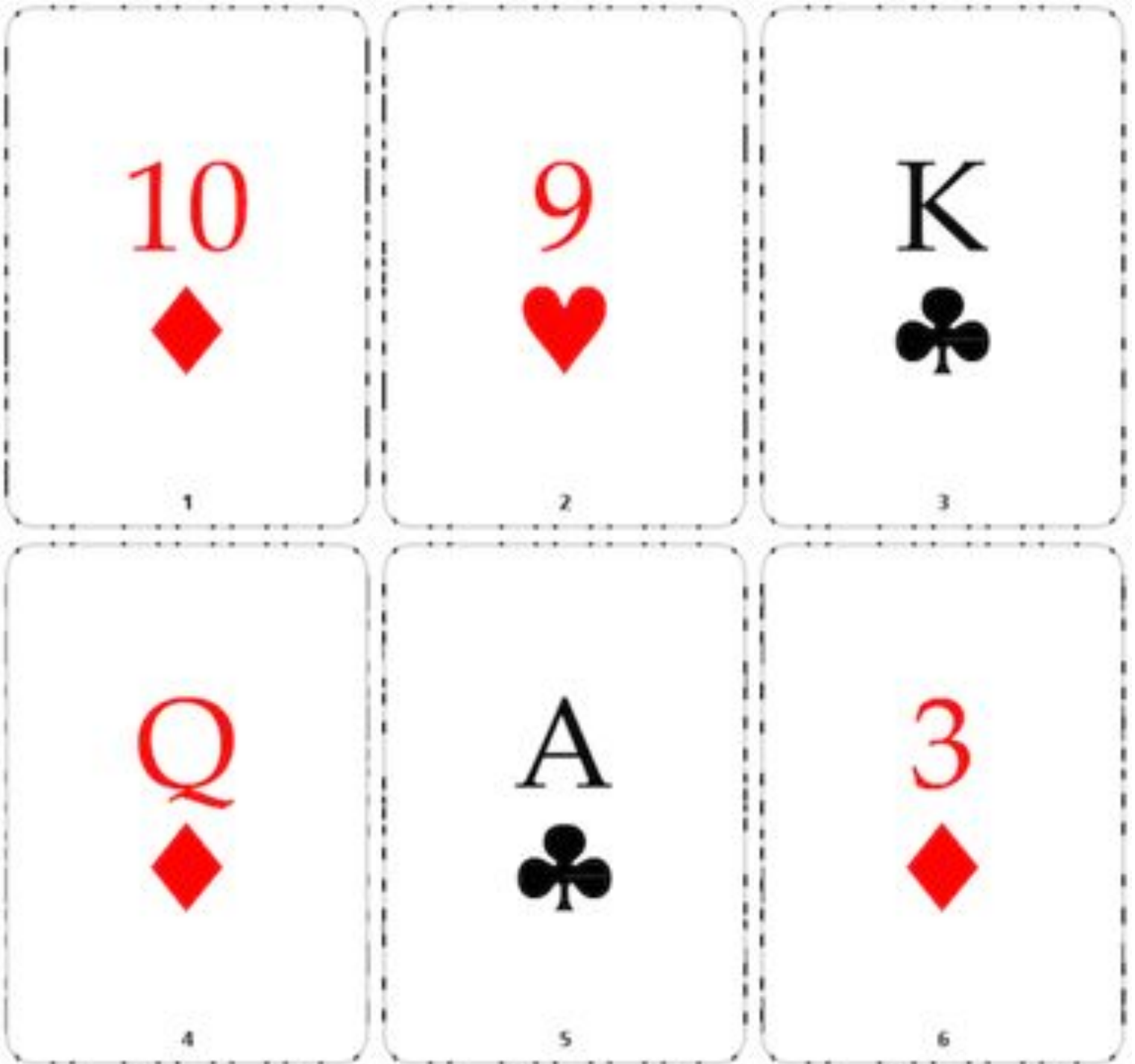
Deal one hand of blackjack. For each player who wins that hand, or for the dealer if no players win, note the **value** of their hand, the **value** of the last card they were dealt, and the **suit** of the last card they were dealt. Deal a second hand, not forgetting to burn the top card again, and again note the value of the winner's hand and the value and suit of their last card. Deal a third hand, and then a fourth, each time noting (you guessed it) the value of the winner's hand and the value and suit of their last card dealt. As a check, you should have dealt (or burned) every card in the deck, every burned card should have been worth 10 points, the suit of each burned card should match the suit of the card(s) you noted for that hand, and each player should have won exactly one hand. Now, take a look at the values you noted to determine your next instructions. When following the instructions, the suits you noted may come in handy...





In the Cards (supplement)

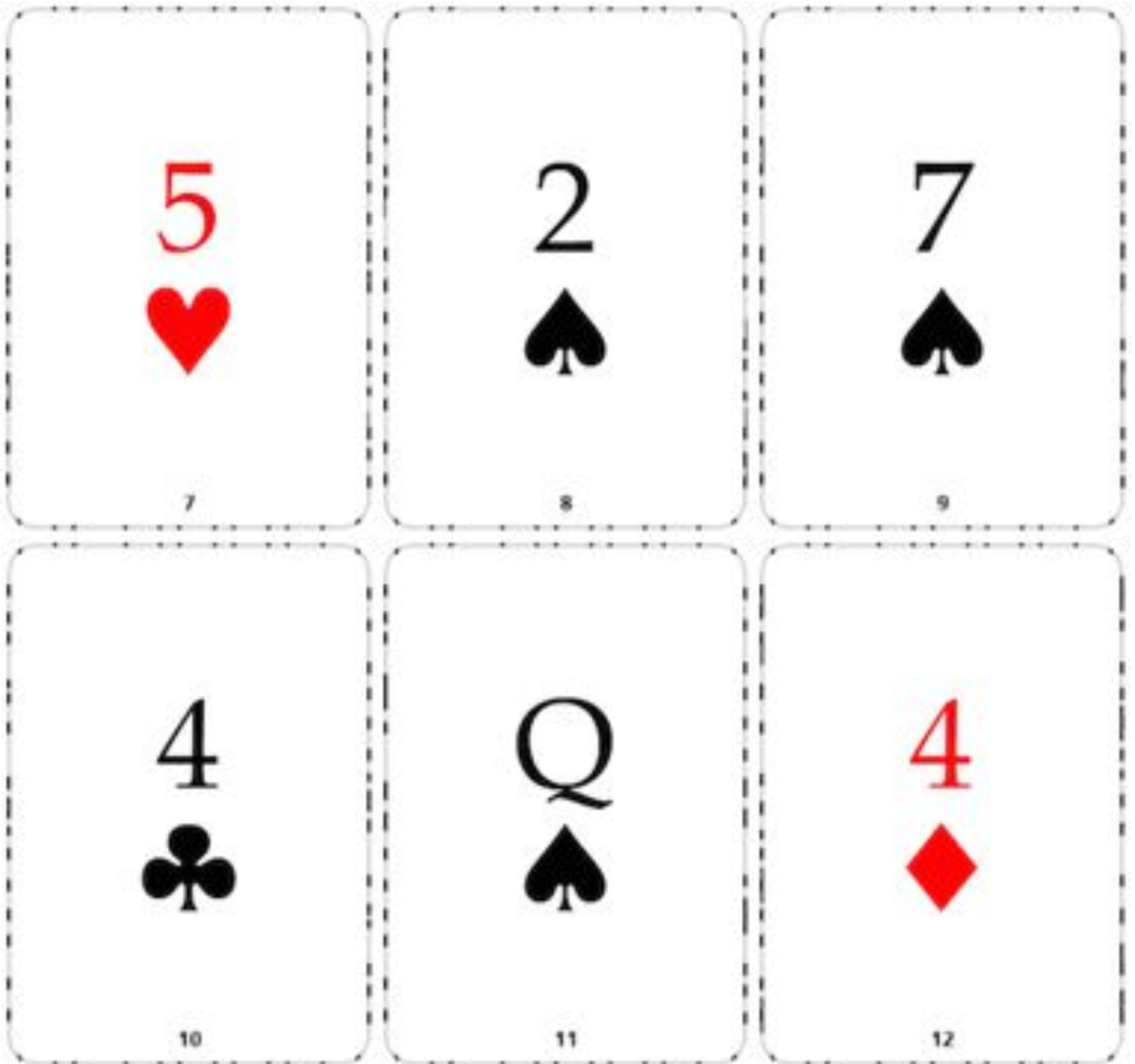
Print out the playing cards below and deal them off from 1-52 for your games of blackjack. You will need these, not your own deck, to solve the puzzle.





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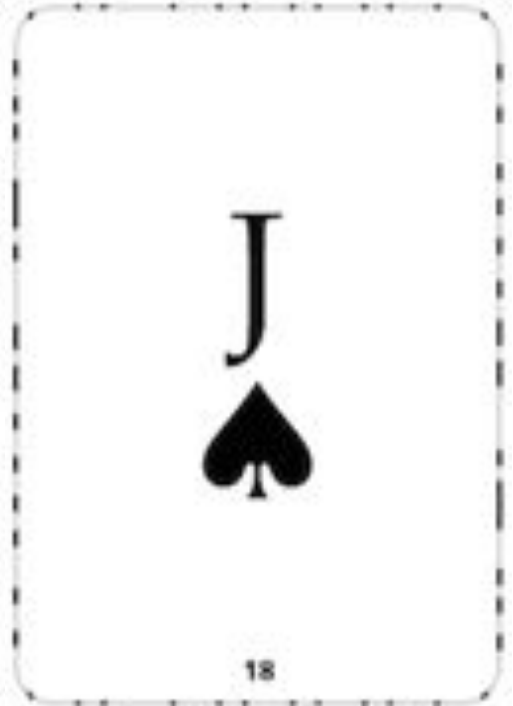
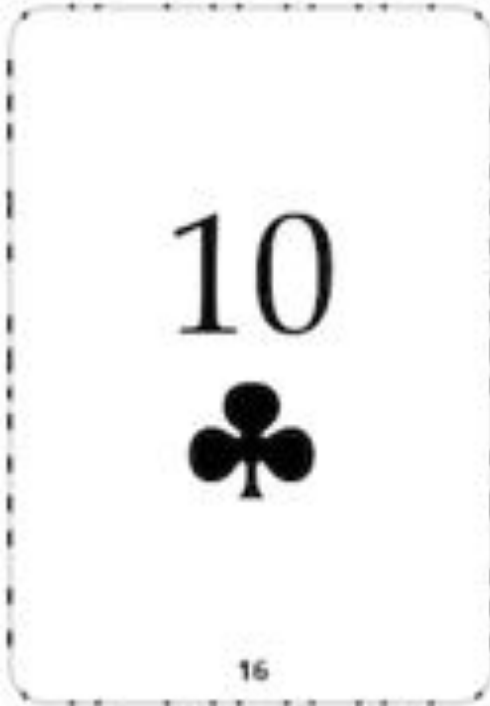
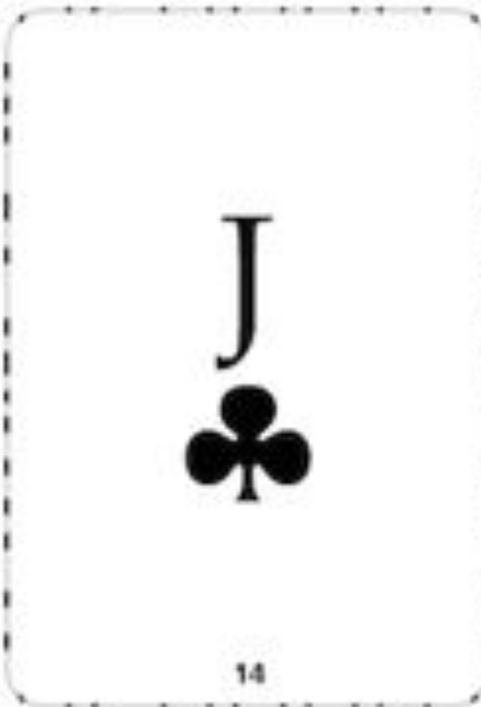
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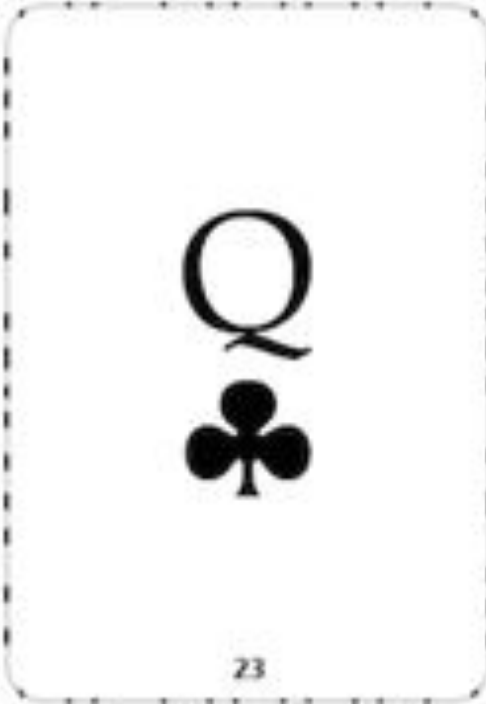
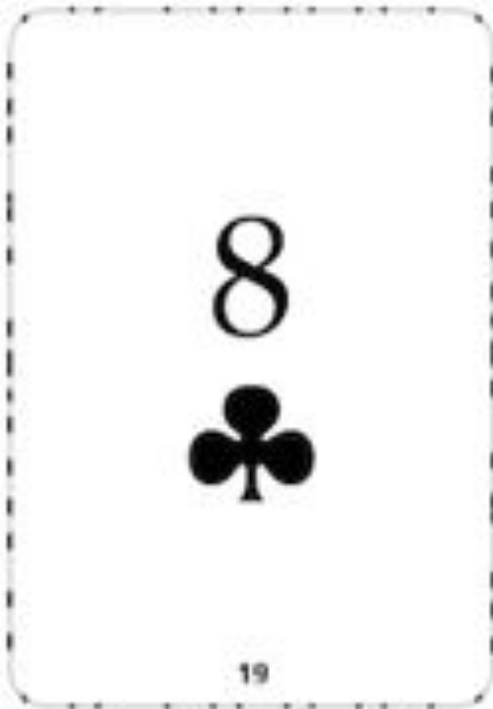
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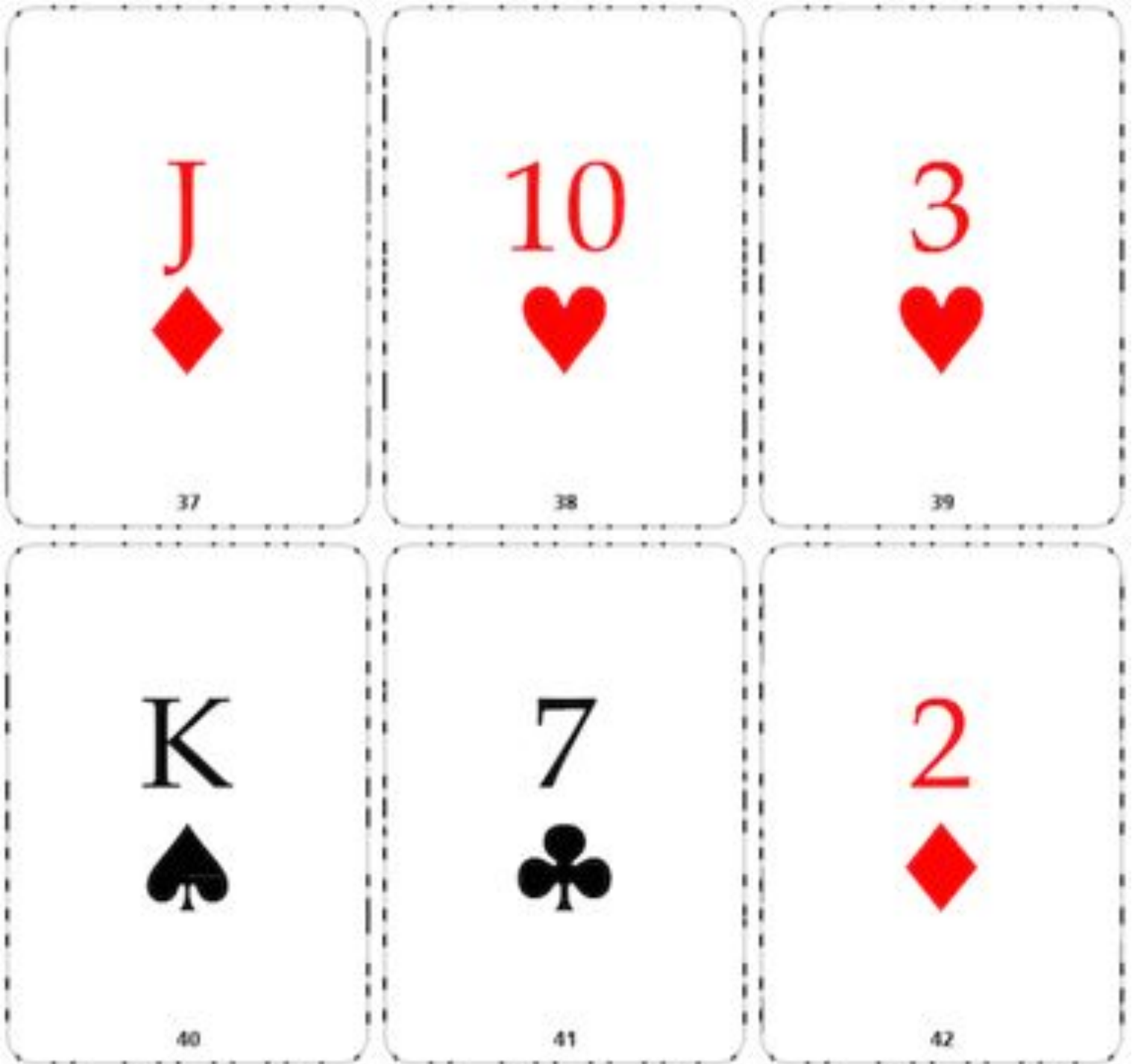
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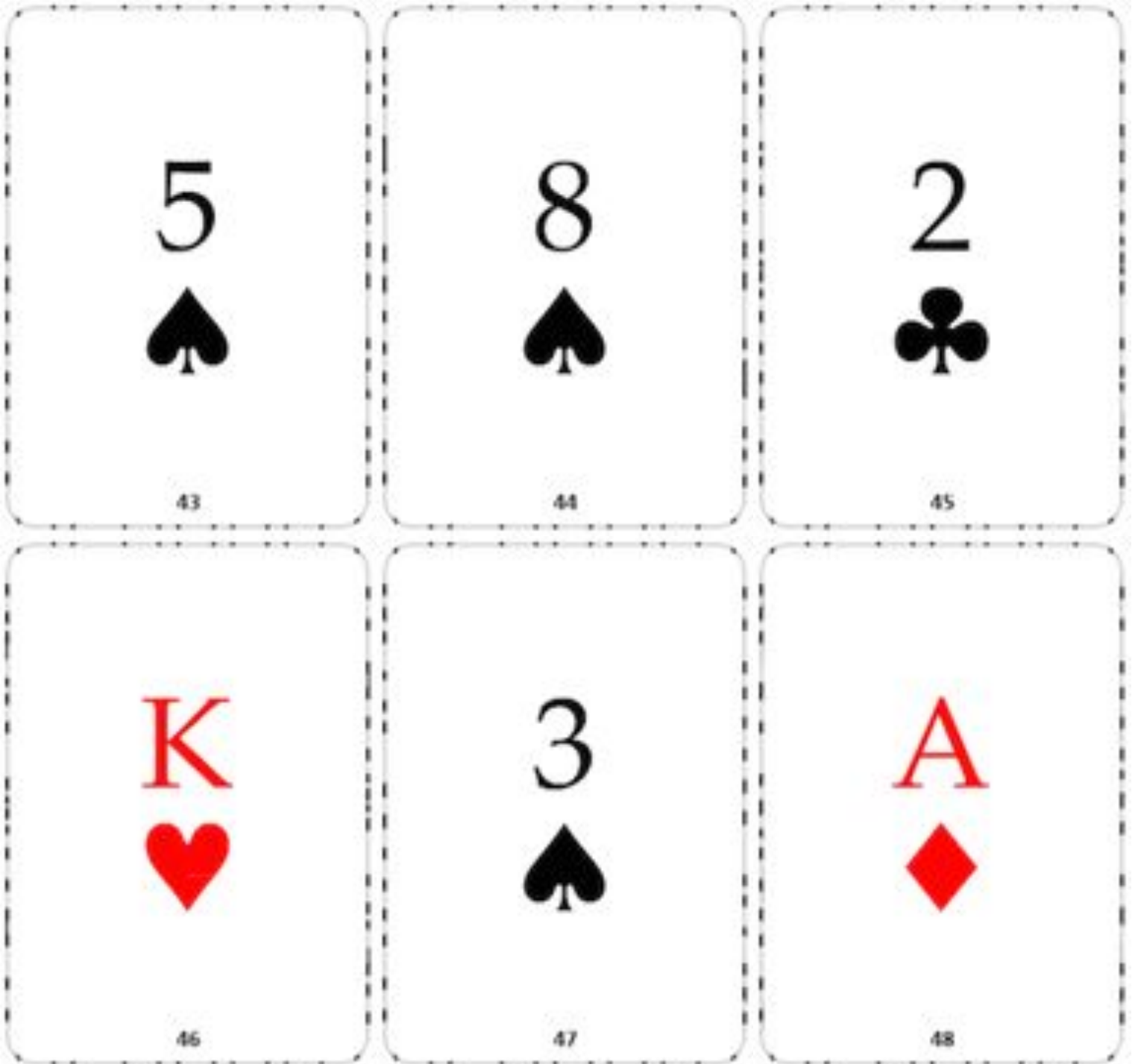
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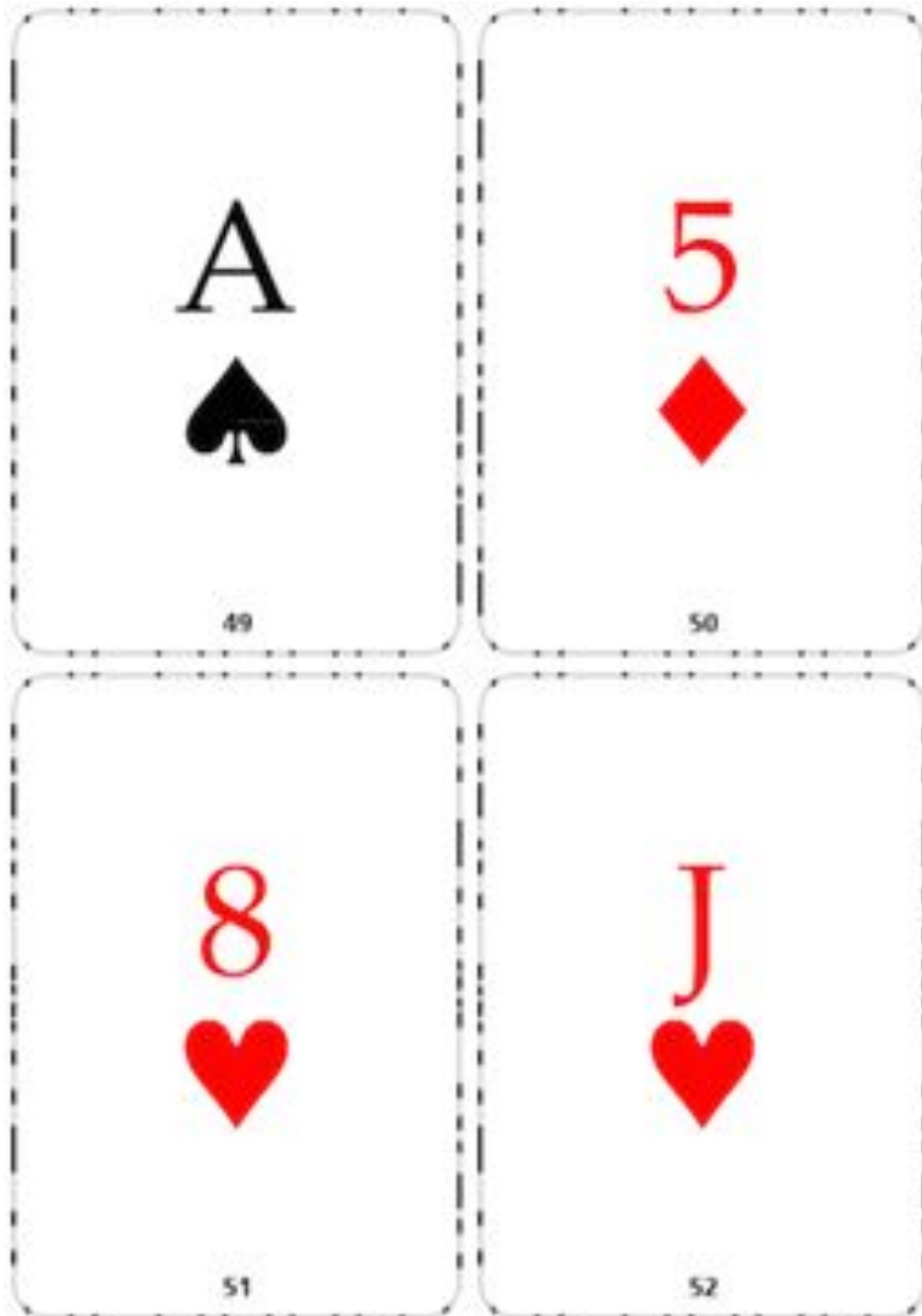
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In the Cards (supplement)

So, you lost track of the order of your cards. Tsk, tsk. In case you mess up again, here's the original order (with the deck facing down, the 10 of Diamonds is on top):

10 of Diamonds
9 of Hearts
King of Clubs
Queen of Diamonds
Ace of Clubs
3 of Diamonds
5 of Hearts
2 of Spades
7 of Spades
4 of Clubs
Queen of Spades
4 of Diamonds
10 of Spades
Jack of Clubs
7 of Diamonds
10 of Clubs
6 of Diamonds
Jack of Spades
8 of Clubs
4 of Hearts
2 of Hearts
5 of Clubs
Queen of Clubs
9 of Diamonds
6 of Spades
King of Diamonds
Queen of Hearts
3 of Clubs
7 of Hearts
9 of Spades
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8 of Diamonds
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