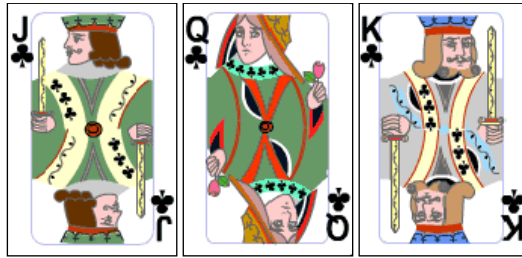
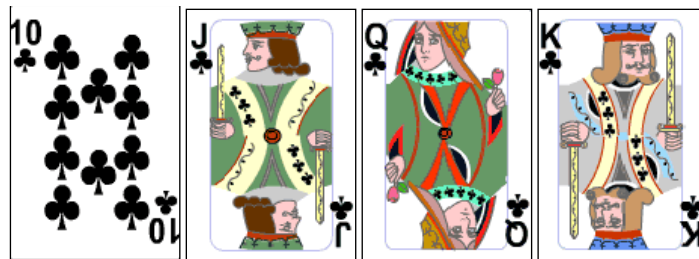


Combinations



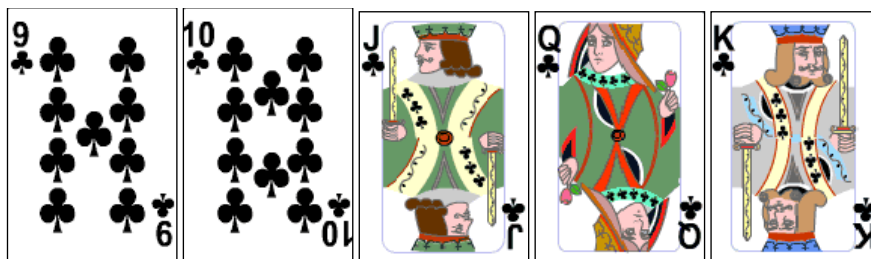
1. From 3 cards on the table. In how many different ways can you pick up...

- a) 0 cards b) 1 card c) 2 cards d) 3 cards



2. From 4 cards on the table. In how many different ways can you pick up...

- a) 0 cards b) 1 card c) 2 cards d) 3 cards e) 4 cards

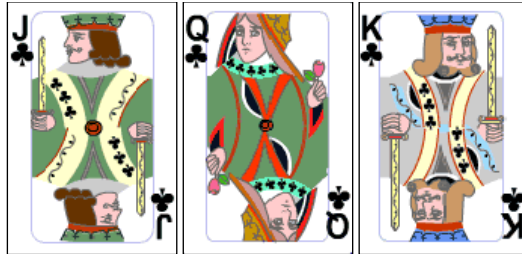


3. From 5 cards on the table. In how many different ways can you pick up...

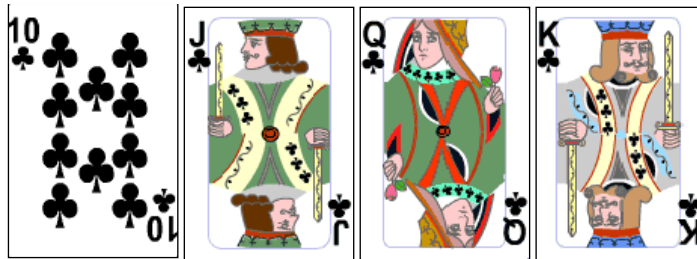
- a) 0 cards c) 2 cards e) 4 cards
b) 1 card d) 3 cards f) 5 cards

Arrangements

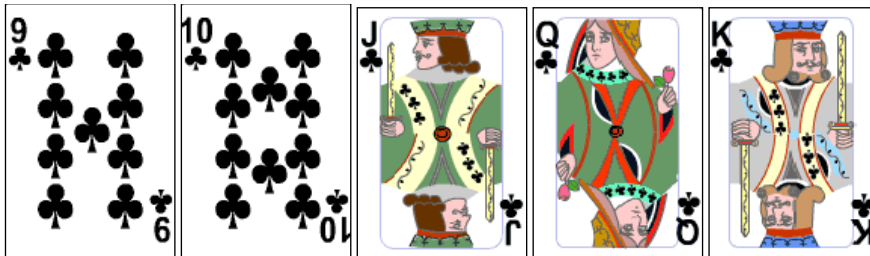
How many ways can you arrange 3 cards in a row?...



How many ways can you arrange 4 cards in a row?...



How many ways can you arrange 5 cards in a row?...

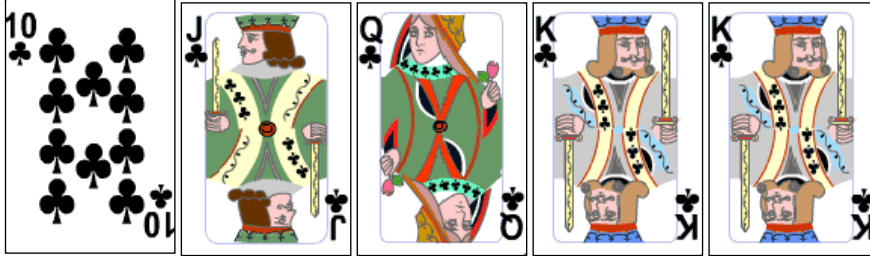


How many ways can you arrange the five cards in a row so that the king and queen are together?

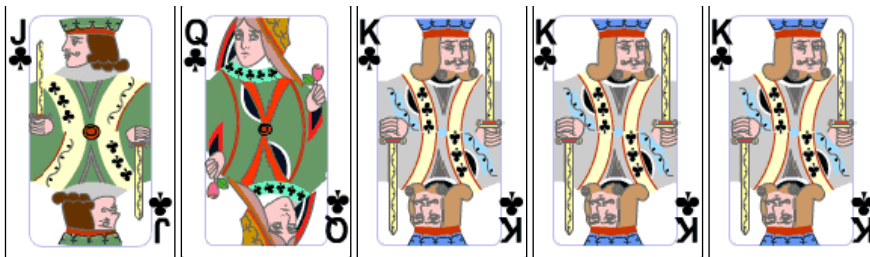
How many ways can you arrange **three** of the five cards in a row?

Getting Harder

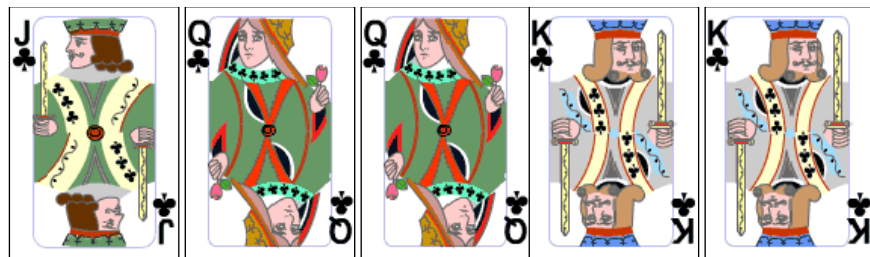
How many ways can you arrange these cards in a row?...



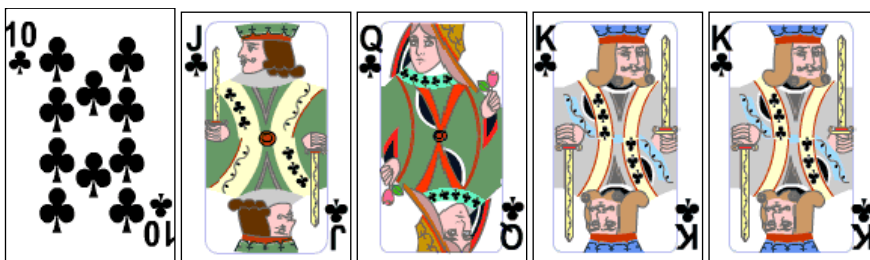
How many ways can you arrange these cards in a row?...



How many ways can you arrange these cards in a row?...

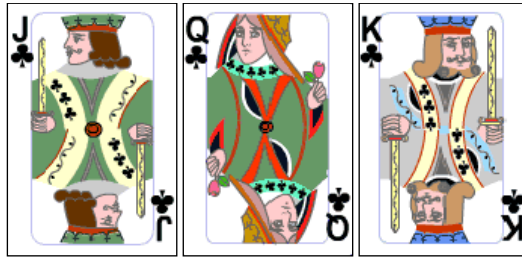


How many ways can you arrange **three** of these cards in a row?...



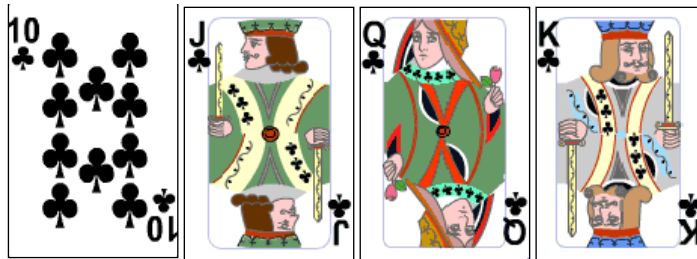
How many ways can you arrange the letters M I S S I S S I P P I ?

Combinations - **Answers**



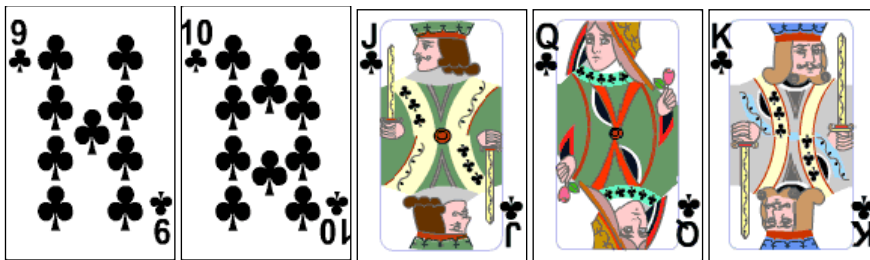
1. From 3 cards on the table. In how many different ways can you pick up...

- a) 0 cards **1** b) 1 card **3** c) 2 cards **3** d) 3 cards **1**



2. From 4 cards on the table. In how many different ways can you pick up...

- a) 0 cards **1** b) 1 card **4** c) 2 cards **6** d) 3 cards **4** e) 4 cards **1**

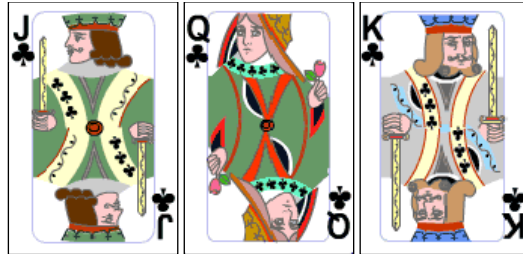


3. From 5 cards on the table. In how many different ways can you pick up...

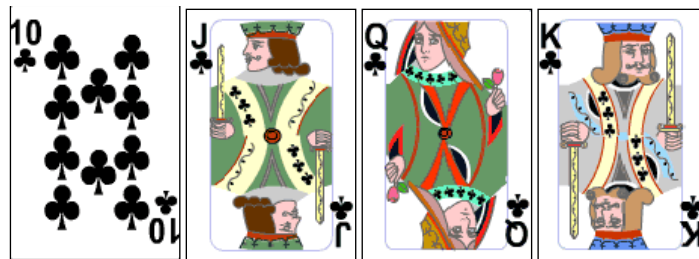
- a) 0 cards **1** c) 2 cards **10** e) 4 cards **5**
 b) 1 card **5** d) 3 cards **10** f) 5 cards **1**

Arrangements - Answers

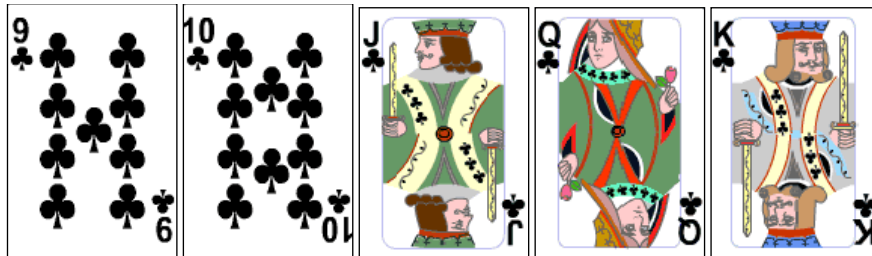
How many ways can you arrange 3 cards in a row?... $3! = 6$



How many ways can you arrange 4 cards in a row?... $4! = 24$



How many ways can you arrange 5 cards in a row?... $5! = 120$

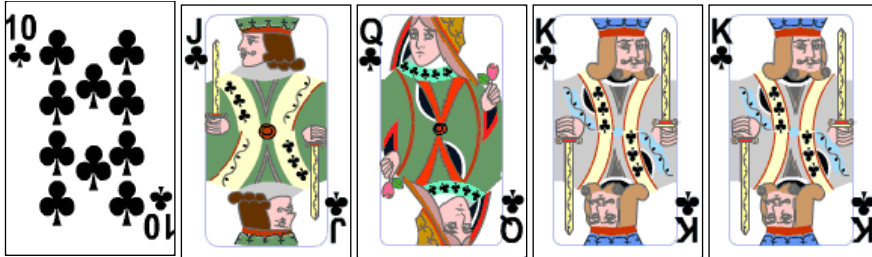


How many ways can you arrange the five cards in a row so that the king and queen are together? $4! 2! = 24 \times 2 = 48$

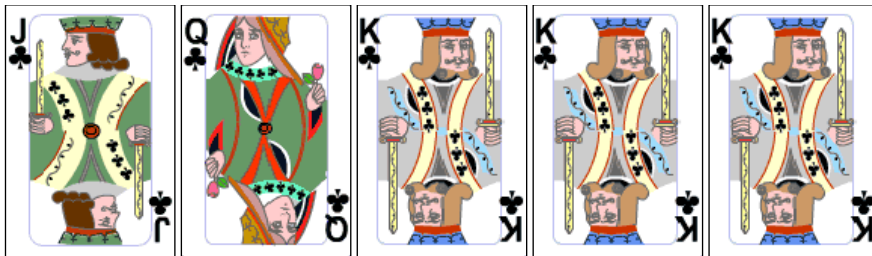
How many ways can you arrange **three** of the five cards in a row? $5 \times 4 \times 3 = 60$

Getting Harder - Answers

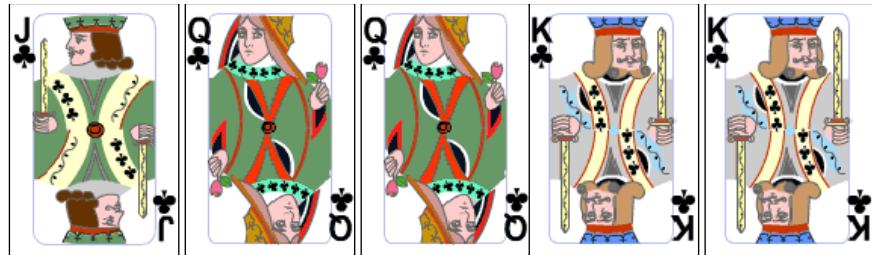
How many ways can you arrange these cards in a row?... $\frac{5!}{2!} = 60$



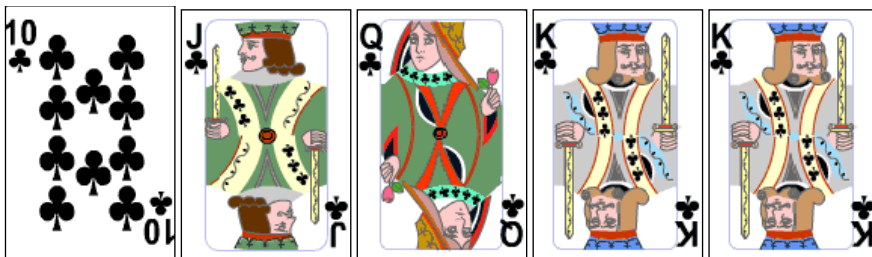
How many ways can you arrange these cards in a row?... $\frac{5!}{3!} = 20$



How many ways can you arrange these cards in a row?... $\frac{5!}{2!2!} = 30$



How many ways can you arrange **three** of these cards in a row?... $\frac{5 \times 4 \times 3}{2!} = 30$



How many ways can you arrange the letters MISSISSIPPI? $\frac{11!}{4!4!2!} = 34650$