

Find the value of each. Show your work before using a calculator.

1. $4!$

5. $5P3$

2. $7!$

6. $8C2$

3. $5! + 3!$

7. $6C4$

4. $4P2$

8. $0!$

State whether each is factorial, permutations, or combinations then find the value of each. You may use a calculator.

9. How many hands of 2 cards are possible from a deck of 52 playing cards?

12. How many different ways are 3 married couples to stand together in a movie theater line assuming that couples are always next to each other?

10. If a baseball team has 12 players, how many different ways are there for the first 3 people to go to bat?

13. How many groups of two can be formed from the following set of people: {harry, barry, larry, mary, gerry, terry, carry}?

11. If 8 teams are in the state volleyball championship, how many different ways are there for people to be ranked at the end of the season?

14. How many different arrangements are there for the letters in the name: SLAGLE?

Find the probability of each situation.

15. What is the probability that you get a 2-card hand from a deck of 52 playing cards that has 2 aces?

16. What is the probability that you randomly rearrange SLAGLE and get an L at the beginning?