Evaluate each expression.

1. $P(7, 3)$
2. $C(7, 3)$
3. $P(13, 5)$
4. $C(13, 5)$

5. How many ways can 9 bowling balls be arranged on the upper rack of a bowling ball shelf?

6. How many different outfits can be made if you choose 1 each from 11 skirts, 9 blouses, 3 belts, and 7 pairs of shoes?

7. How many ways can the letters of the word *probability* be arranged?

8. How many different soccer teams consisting of 11 players can be formed from 18 players?

9. Eleven points are equally spaced on a circle. How many ways can five of these points be chosen as the vertices of a pentagon?

10. A number is drawn at random from a hat that contains all the numbers from 1 to 100. What is the probability that the number is less than 16?

11. Two cards are drawn in succession from a standard deck of cards without replacement. What is the probability that both cards are greater than 2 and less than 9?

12. A shipment of 10 television sets contains 3 defective sets. How many ways can a hospital purchase 4 of these sets and receive at least 2 of the defective sets?

13. In a row of 10 parking spaces in a parking lot, how many ways can 4 cars park?

14. While shooting arrows, William Tell can hit an apple 9 out of 10 times. What is the probability that he will hit it exactly 4 out of 7 times?

15. Ten people are going on a camping trip in three cars that hold 5, 2, and 4 passengers, respectively. How many ways is it possible to transport the people to their campsite?

16. The number of colored golf balls in a box is shown in the table below.

Color	Number of Golf Balls
white	5
red	3

Three golf balls are drawn from the box in succession, each being replaced in the box before the next draw is made. What is the probability that all 3 golf balls are the same color?

For Exercises 17–19, use the following information.

In a ten-question multiple-choice test with four choices for each question, a student who was not prepared guesses on each item. Find each probability.

17. 6 questions correct
18. at least 8 questions correct
19. fewer than 8 questions correct

20. **MULTIPLE CHOICE** The average amount of money that a student spends for lunch is $4. What is the probability that a randomly selected student spends less than $3 on lunch?

A 0.36
B 0.47
C 0.49
D 0.52

21. **MULTIPLE CHOICE** A mail-order computer company offers a choice of 4 amounts of memory, 2 sizes of hard drives, and 2 sizes of monitors. How many different systems are available to a customer?

F 8
G 16
H 32
J 64