1. A doctor visits her patients during morning rounds. In how many ways can the doctor visit 4 patients during the morning rounds?

Answer : _____

2. A coordinator will select 6 songs from a list of 13 songs to compose an event's musical entertainment lineup. How many different lineups are possible?

Answer : _____

3. How many ways can Aileen choose 3 pizza toppings from a menu of 19 toppings if each topping can only be chosen once?

4. 7 cards are drawn from a standard deck of 52 playing cards. How many different 7-card hands are possible if the drawing is done without replacement?

Answer : _____

5. A person tosses a coin 7 times. In how many ways can he get 5 heads?

Answer : _____

6. Evaluate the following expression.

$$6!$$

7. Evaluate the following expression.

$$\frac{10!}{7!}$$

8. Evaluate the following expression.

$$\frac{12!}{10!\,2!}$$

9. Evaluate the following expression.

$$\frac{9!}{6!(9-6)!}$$

10. Evaluate the following expression.

$${}_8P_5$$

11. Evaluate the following expression.

$${}_{11}C_6$$

12. You are ordering a hamburger and can get up to 6 toppings, but each topping can only be used once. You tell the cashier to surprise you with the toppings you get. What is the probability that you get 3 toppings? Express your answer as a fraction or a decimal number rounded to four decimal places.

13. In how many ways can the letters in the word 'Population' be arranged?

14. Ben wants to buy a new collar for each of his 2 dogs. The collars come in a choice of 7 different colors.
Step 1 of 2:
How many selections of collars for the 2 dogs are possible if repetitions of colors are allowed?

Answer : _____

Step 2 of 2:
How many selections of collars are possible if repetitions of colors are not allowed?

Answer : _____

15. Customer account "numbers" for a certain company consist of 3 letters followed by 5 numbers.
    Step 1 of 2:
    How many different account numbers are possible if repetitions of letters and digits are allowed?

    Answer : _____

    Step 2 of 2:
    How many different account numbers are possible if repetitions of letters and digits are not allowed?

    Answer : _____

16. How many ways can 7 desks and 5 stools be chosen from a shipment of 13 desks and 7 stools?

    Answer : _____

17. How many ways can a delegation of 3 Republicans, 4 Democrats, and 2 Independents be selected from a group of 9 Republicans, 6 Democrats, and 4 Independents?

    Answer : _____

18. A certain congressional committee consists of 14 senators and 13 representatives. How many ways can a subcommittee of 5 be formed if at least 4 of the members must be representatives?

    Answer : _____

19. If a coin is tossed 3 times, and then a standard six-sided die is rolled 3 times, and finally a group of three cards are drawn from a standard deck of 52 cards without replacement, how many different outcomes are possible?

    Answer : _____

20. A veggie wrap at City Subs is composed of 3 different vegetables and 3 different condiments wrapped up in a tortilla. If there are 8 vegetables, 8 condiments, and 5 types of tortilla available, how many different veggie wraps can be made?

21. Maya is picking out material for her new quilt. At the fabric store, there are 13 solids, 6 striped prints, and 6 floral prints that she can choose from. If she needs 4 solids, 3 floral prints, and 4 striped fabrics for her quilt, how many different ways can she choose the materials?