

Chapter 12 review

I. Counting principle

1. The letters a,b,c,e,g and f are used to form a 6-letter password for a security system. How many can be formed if a letter can be used more than once.
2. If the letters cannot repeat?

II. Permutations

3. How many ways can 8 people be seated at a round table?
4. How many ways can the letters of "*circular*" be arranged?
5. How many ways can 3 books be placed on a shelf if chosen from 7 books?

Note: round means they are reflections such as a bracelet or key ring has half as many because they can be flipped over.

III. Combinations

6. Find the number of ways that 3 green and 3 red marbles can be chosen from 12 green and 8 red marbles?

IV. Probability

7. What is the probability of selecting a purple pencil if there are 5 purple, 6 blue and 3 red pencils?

8. If $P = \frac{1}{5}$ find the odds

9. If the odds are 3:7 find the probability

10.
$$\frac{P(10,5)C(6,2)}{C(4,2)}$$

11. What is the difference between a dependent and an independent event?

12. What is the difference between a permutation and a combination?