Name _____ Date _____

LESSON 13.3

Practice A

For use with pages 856–860

Count the number of combinations of the given number of letters from the list K, L, M, N, O, P.

1. two letters

2. three letters

3. five letters

Write the notation for the given description.

4. The number of combinations of 12 objects taken 2 at a time

5. The number of combinations of 18 objects taken 7 at a time

Write the meaning of the notation in words.

6. ${}_{14}C_3$

7. ${}_{22}C_9$

Match the notation with the correct expression.

8. ${}_{12}C_4$

9. ${}_{12}C_3$

10. ${}_{12}C_2$

A. $\frac{12!}{9!3!}$

B. $\frac{12!}{8!4!}$

C. $\frac{12!}{10!2!}$

Evaluate the expression.

11. ${}_8C_1$

12. ${}_{10}C_3$

13. ${}_9C_6$

In Exercises 14 and 15, tell whether the question can be answered using *combinations* or *permutations*. *Explain* your choice.

14. Five students from your class of 100 students will be selected to be sent on to a leadership conference. How many groups of 5 students are possible?

15. Ten students try out to be in one of the 4 different positions of your track's relay team. In how many ways can the 4 positions be filled?

16. **Art Fair** On the last day of an art fair, an artist offers a special on her photographs. You can buy 2 small photos and 1 large photo for $75. She has 14 different small photos and 10 different large photos left to choose from.

a. How many different choices of 2 small photos are possible?

b. How many different choices of 2 small photos and 1 large photo are possible?

17. **Movies** The programming committee at a college is selecting the movies that will be shown throughout the semester. They have a list of 30 possible movies and they must select 5 movies from the list. How many different combinations of 5 movies are possible?

18. **Group Project** You have been working on a group project with 4 other people. Your group has decided to have two people present the project together. How many combinations of 2 people from the group are possible? What is the probability that you are one of the two people?

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