

LESSON
11.3**Practice C**

For use with the lesson "Find Probabilities Using Combinations"

Evaluate the expression.

1. ${}_9C_3$

2. ${}_6C_6$

3. ${}_{15}C_0$

4. ${}_1C_1$

5. ${}_{13}C_5$

6. ${}_8C_2$

7. ${}_{22}C_5$

8. ${}_{30}C_{20}$

9. ${}_{17}C_{10}$

Complete the statement using $>$, $<$, or $=$.

10. ${}_{14}C_2 \text{ } ? \text{ } {}_9C_5$

11. ${}_{25}C_5 \text{ } ? \text{ } {}_{20}C_7$

12. ${}_{12}C_4 \text{ } ? \text{ } {}_{12}C_8$

13. ${}_{15}C_3 \text{ } ? \text{ } {}_{24}C_{22}$

14. ${}_8C_0 \text{ } ? \text{ } {}_8C_2$

15. ${}_{11}C_4 \text{ } ? \text{ } {}_{15}C_4$

In Exercises 16–18, tell whether the question can be answered using combinations or permutations. Explain your choice, then answer the question.

16. Five students from the 90 students in your class will be selected to answer a questionnaire about participating in school sports. How many groups of 5 students are possible?
17. Eleven students are trying out for 5 different positions in the school band. In how many ways can the 5 positions be filled?
18. To complete a quiz, you must answer 4 questions from a list of 12 questions. In how many ways can you complete the quiz?
19. **Athletic Shoes** The buyer for a sporting goods store must decide which athletic shoes to stock for the upcoming selling season. A shoe from one manufacturer comes in 6 different colors and 4 different styles. The buyer decides that the store will stock the shoes in 4 different colors and 2 different styles. How many different shoe combinations are possible?
20. **Committee** You have been working on the prom planning committee with 5 other people. Your committee has decided to choose two people randomly to present the prom plan to the student body.
- How many combinations of 2 people from the group are possible?
 - What is the probability that you are one of the two people?
21. **Volunteers** Your class is participating in the school fair and will run the refreshments table. Your teacher has asked for 4 volunteers to run the table. Fifteen of the students in the class volunteer, so your teacher will randomly choose 4 people from the group. You and your friend are part of the group that would like to volunteer. What is the probability that you and your friend are chosen? What is the probability that you are chosen first and your friend is chosen second? Which event is more likely to occur? *Explain* how you found your answer.