Name _

LESSON 11.2 **Challenge Practice**

For use with the lesson "Find Probabilities Using Permutations"

Date

In Exercises 1-8, simplify the expression.

- **1.** ${}_{n}P_{1}$ **2.** ${}_{n}P_{n}$ **3.** ${}_{n}P_{2}$ **5.** ${}_{n}P_{0}$

- **4.** ${}_{n}P_{n-1}$
- **6.** ${}_{n}P_{3}$
- **7.** ${}_{n}P_{n-2}$
- 8. $_{n}P_{n-3}$

In Exercises 9–12, use the following information.

Suppose there are 25 students in your math class, and the teacher assigns the seating at random in five rows each containing five students.

- 9. What is the probability that you sit in the first seat in the front row and your best friend sits immediately next to you?
- **10.** What is the probability that you sit on either end of a row and your best friend sits immediately next to you?
- **11.** The teacher forms five groups by combining the students in each row into one of five groups. Suppose the groups are sent to the board, in random order, to work a problem. What is the probability your group goes to the board last?
- **12.** What is the probability that you and your best friend are in the same row?

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