Name _____ Date _____

LESSON 13.2

Practice A

For use with pages 851–855

1. List all the possible permutations for the numbers 3, 5, and 7.

Find the number of ways you can arrange (a) all of the letters in the given word and (b) 2 of the letters in the word.

2. ON **3.** TAP **4.** STAR

Evaluate the expression.

5. 2! **6.** 4! **7.** 7!

Write the notation for the given description.

8. The number of permutations of 10 objects taken 3 at a time

9. The number of permutations of 14 objects taken 4 at a time

Write the meaning of the notation in words.

10. ${}_{13}P_2$ **11.** ${}_{17}P_8$

Match the notation with the correct expression.

12. ${}_{10}P_4$ **13.** ${}_{10}P_6$ **14.** ${}_{10}P_2$

A. $\frac{10!}{8!}$ **B.** $\frac{10!}{6!}$ **C.** $\frac{10!}{4!}$

Evaluate the expression.

15. ${}_4P_3$ **16.** ${}_6P_2$ **17.** ${}_7P_4$

18. **Concert** Seven friends go to a concert. In how many different ways can they sit together in a row of 7 empty seats?

19. **Appliance Delivery** An appliance delivery person has 5 deliveries to make. The destinations are all so close, it doesn't matter the order in which the appliances are delivered. In how many orders can the deliveries be made?

20. **Side Work** You and three of your friends work together at a restaurant. You choose your side jobs by each of you drawing one of four straws, each with a different length.

a. List all of the possible ways the straws can be drawn by the four of you.

b. Use the formula for permutations to find the number of ways in which the straws can be drawn.

c. What is the likelihood that you will draw the shortest straw? *Explain* your answer by using probability.

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