Name _____ Date _____

LESSON 10.1

# Practice A

*For use with pages 682–689*

**An object has an attribute from each list. Make a tree diagram that shows the number of different objects that can be created.**

**1.**

| Lunch |
|---|
| **Beverage:** milk, juice, water |
| **Sandwich:** ham, turkey, veggie |

**2.**

| Computer Monitors |
|---|
| **Type:** flat screen, flat panel |
| **Size:** 15 in., 17 in., 19 in., 21 in. |

**Each event can occur in the given number of ways. Find the number of ways all of the events can occur.**

**3.** Event A: 2 ways; Event B: 4 ways

**4.** Event A: 3 ways; Event B: 6 ways

**For the given configuration, determine how many different computer passwords are possible if (a) digits and letters can be repeated, and (b) digits and letters cannot be repeated.**

**5.** 5 digits followed by 2 letters

**6.** 3 digits followed by 2 letters

**7.** 5 letters followed by 1 digit

**8.** 2 letters followed by 6 digits

**Evaluate the expression.**

**9.** $2!$

**10.** $6!$

**11.** $12!$

**12.** $7!$

**13.** $8(4!)$

**14.** $3! \cdot 7!$

**15.** $\frac{8!}{(9-3)!}$

**16.** $\frac{14!}{9! \cdot 5!}$

**Find the number of permutations.**

**17.** ${}_5P_5$

**18.** ${}_7P_1$

**19.** ${}_8P_3$

**20.** ${}_{10}P_7$

**21.** **Photography** A photographer lines up the 13 players of a basketball team in a single line in order to take a team picture. How many different ways can the photographer arrange the team for the picture?

**22.** **Home Decor** You want to remodel your bedroom by replacing the curtains, painting the walls, and changing the carpet. You have 9 choices of curtains, 12 choices of paint, and 18 choices of carpeting. How many different ways can you choose curtains, paint, and carpeting for your room? (Assume that you can only choose one type in each category.)