

Name _____ Period _____

10.8B Combinations and Permutations continued

Tell whether the situation describes a permutation or combination. Then answer the question. Show your work.

1. Find the number of permutations of the letters in the word GUITAR.

Permutation - order matters ${}_6 P_6 = 720$

2. A cheerleading squad has 14 members. In how many ways can 2 co-captains be chosen?

3. In how many ways can you choose 3 different toppings for your ice cream from 10 toppings?

4. A band has recorded 10 songs. In how many ways can they order the songs on their CD?

5. You want to buy 5 different shades of nail polish. In how many ways can you choose 5 shades from 42 shades?

6. There are 16 divers participating in a diving competition. In how many ways can the divers be awarded first, second, and third place?

Permutation - order matters ${}_{16} P_3 = 3,360$

7. The combinations for the lockers at a school have 3 numbers. Each of the numbers is a number from 0 to 49. How many locker combinations are possible if the numbers cannot be repeated?

8. In how many ways can a teacher choose a group of 6 students from a class of 26 students?

Combination - order does not matter
 ${}_{26} C_6 = 230,230$

10.8 Combinations and Permutations continued

Tell whether the situation describes a permutation or combination. Then answer the question. Show your work.

9. A group of 7 friends goes to a movie. In how many ways can they sit in a row that has 7 empty seats? *Permutation - order matters*

$${}_7P_7 = 5040$$

10. In how many ways can you choose 3 posters from the 24 posters at a music store?

11. You need to buy fruit for a fruit salad. In how many ways can you choose 6 different types of fruit from the 18 types of fruit at a grocery store?

Combination - order does not matter ${}_{18}C_6 = 18,564$

12. In how many ways can the coach arrange the batting order of the starting 9 players on a baseball team?