Permutations & Combinations   Name_____
Worksheet   Date_____Period_____

Solve the problem using permutations or combinations. Show all calculator work.

1. A class has 30 students. In how many ways can committees be formed using the following number of students?

        a) 3 students   b) 5 students

2. Twelve skiers compete in the final round of an Olympic skiing event. In how many ways can three of the skiers finish first, second, and third to win the gold, silver and bronze medals?

3. The company Sea Esta has ten members on its board of directors. In how many different ways can it elect a president, vice-president, secretary and treasurer?

4. There are 8 online songs that you want to download. If you only have enough money to download 3 of the songs, how many different groups of songs can you buy?

5. Suppose you are asked to list, in order or preference, the three best movies you have seen this year. If you saw 10 movies during the year, in how many ways can the three best be chosen and ranked?

6. A friend says that there are 6720 different ways to combine 5 out of 8 ingredients to make a stew. Explain the error and find the correct answer.

7. For a segment of a radio show, a disc jockey (Dr. Jams) can play 4 songs. If there are 8 to select from, in how many ways can the program for this segment be arranged?

8. Seven bands have volunteered to perform at a benefit concert, but there is only enough time for four of the bands to play. How many lineups are possible?

9. A four-person committee is to be elected from an organization's membership of 11 people. How many different committees are possible?