Name_____

Permutations vs Combinations

Date_____ Period_____

State if each scenario involves a permutation or a combination.

1) A team of 8 basketball players needs to choose a captain and co-captain.

2) Rob and Mary are planning trips to nine countries this year. There are 13 countries they would like to visit. They are deciding which countries to skip.

3) The batting order for seven players on a 12 person team.

4) There are 45 applicants for three Computer Programmer positions.

State if each scenario involves a permutation or a combination. Then find the number of possibilities.

5) Castel and Joe are planning trips to three countries this year. There are 7 countries they would like to visit. One trip will be one week long, another two days, and the other two weeks.

6) There are 110 people at a meeting. They each shake hands with everyone else. How many handshakes were there?

7) You are setting the combination on a three-digit lock. You want to use the numbers 123 but don't care what order they are in.

8) A group of 25 people are going to run a race. The top 8 finishers advance to the finals.

9) A team of 17 softball players needs to choose three players to refill the water cooler.

10) 5 out of 13 students will ride in a car instead of a van

11) The student body of 10 students wants to elect a president, vice president, secretary, and treasurer.

12) Selecting which seven players will be in the batting order on a 11 person team.

13) There are 15 applicants for four jobs: Computer Programmer, Software Tester, Manager, and Systems Engineer.

14) A group of 45 people are going to run a race. The top three runners earn gold, silver, and bronze medals.

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State if each scenario involves a permutation or a combination.

1) A team of 8 basketball players needs to choose a captain and co-captain.

   Permutation

2) Rob and Mary are planning trips to nine countries this year. There are 13 countries they would like to visit. They are deciding which countries to skip.

   Combination

3) The batting order for seven players on a 12 person team.

   Permutation

4) There are 45 applicants for three Computer Programmer positions.

   Combination

State if each scenario involves a permutation or a combination. Then find the number of possibilities.

5) Castel and Joe are planning trips to three countries this year. There are 7 countries they would like to visit. One trip will be one week long, another two days, and the other two weeks.

   Permutation; 210

6) There are 110 people at a meeting. They each shake hands with everyone else. How many handshakes were there?

   Combination; 5,995

7) You are setting the combination on a three-digit lock. You want to use the numbers 123 but don't care what order they are in.

   Permutation; 6

8) A group of 25 people are going to run a race. The top 8 finishers advance to the finals.

   Combination; 1,081,575

9) A team of 17 softball players needs to choose three players to refill the water cooler.

   Combination; 680

10) 5 out of 13 students will ride in a car instead of a van

   Combination; 1,287

11) The student body of 10 students wants to elect a president, vice president, secretary, and treasurer.

   Permutation; 5,040

12) Selecting which seven players will be in the batting order on a 11 person team.

   Combination; 330

13) There are 15 applicants for four jobs: Computer Programmer, Software Tester, Manager, and Systems Engineer.

   Permutation; 32,760

14) A group of 45 people are going to run a race. The top three runners earn gold, silver, and bronze medals.

   Permutation; 85,140