

Worksheet 11.6b

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.

Name: _____ # _____

Answer the following only.

15. A restaurant offers four sizes of pizza, two types of crust, and eight toppings. How many possible combinations of pizza with one topping are there?

16. How many ways can 5 paintings be line up on a wall?

17. Rob has 4 shirts, 3 pairs of pants, and 2 pairs of shoes that all coordinate. How many outfits can you put together?

18. Grace loves to eat salad! How many salads can she put together if she can pick out one type of lettuce from 2 choices, one vegetable from 4 choices and one dressing from 7 choices?

19. How many 5-digit numbers can be formed (using 0 - 9)?

20. How many 5-digit numbers can be formed if each one uses all the digits 0, 1, 2, 3, 4 without repetition?