

College Algebra Review 11.6

State if each scenario involves a permutation or a combination

- 1) The batting order for eight players on a 10 person team.
- 2) A team of 14 soccer players needs to choose two players to refill the water cooler.
- 3) The student body of 165 students wants to elect three representatives.
- 4) The student body of 125 students wants to elect a president and vice president.

Find the number of possibilities in each scenario.

- 5) There are 10 students at a meeting. They each give a Valentine's Day card to everyone else. How many cards were given?
- 6) Kathryn has homework assignments in four subjects. She only has time to do two of them.
- 7) A group of 35 people are going to run a race. The top three runners earn gold, silver, and bronze medals
- 8) Darryl has homework assignments in six subjects. He only has time to do three of them.
- 9) There are 20 athletes at a meeting. They each give a Valentine's Day card to everyone else. How many cards were given?
- 10) A group of 50 people are going to run a race. The top three runners earn gold, silver, and bronze medals.
- 11) There are 10 applicants for two Computer Programmer positions
- 12) The batting order for nine players on a 12 person team.
- 13) You go to the snack bar to buy a bagel and a drink for lunch. You can choose from a plain bagel, a blueberry bagel, or a raisin bagel. The choices for a drink include water or a sports drink. How many different lunches could be made with these choices?

- 14) How many ways can 5 paintings be lined up on a wall?
- 15) You go to Best Buy to purchase a new television. You have the following choices: LCD or plasma; screen size 27", 32", 36", 41", 51", or 63" and manufacturer Sony, Vizio or Phillips. How many different televisions does the store have to offer?
- 16) A lock has four dials. On each dial are the digits 0 to 9. How many possible combinations are there?
- 17) You have decided to take a vacation. You want to go from Los Angeles to San Francisco and then to Hawaii, and you have all summer for your trip. To get from L.A. to San Francisco you can choose to drive, fly, take a bus, or take the train. From San Francisco to Hawaii you can fly, cruise, or sail. In how many different ways can you travel from Los Angeles to Hawaii?
- 18) How many four-digit numbers can be made using the digits 1, 2, 3, 4, 5, 6, 7 if it is okay to repeat a digit in a number?
- 19) How many four-digit numbers could you make with the digits 1, 2, 3, 4, 5, 6, 7 if you could not repeat the use of any digit?
- 20) How many different ways can you have your quarter pound hamburger prepared if you can have it prepared with or without mustard, ketchup, mayonnaise, lettuce, tomatoes, pickles, cheese, and onions?
- 21) How many arrangements of the letters in the word SQUARE begin with SQ ?
- 22) Five teenagers go to the movies. They want to sit together in a row with a student on each aisle (assume the row is 5 seats wide including 2 aisle seats).
 - a. How many ways can they sit in the row?
 - b. If Kris wants to sit in an aisle seat, how many ways can they all sit in the row?
 - c. If Patrice wants to sit on an aisle seat with Beth next to her, how many ways can the five students sit?
- 23) How many arrangements of all the letters in the word PYRAMID do not end with D?