Review for Quiz #1

NAME _____

SHOW ALL WORK ON OWN PAPER

1) Determine whether the following situations involve a permutation or a combination.
   a) Selecting 5 members from a committee to put up flyers C
   b) 12 people are running for secretary and treasurer P
   c) 10 students trying out for 3 different positions in the school band. P

2) How many different outfits can Felicity get from 5 pairs of pants, 4 shirts, 3 skirts and 2 jackets?

120

3) If a marble is drawn from a bag that contains 5 blue, 4 red, 3 yellow and 2 purple, what is the probability that the marble drawn is yellow?

3/14

4) Sally must choose 3 books to read from a list 8 books. How many different ways can she choose the books?

56

5) Rosie needs to assign her chores in order. If she has 7 different chores, how many ways can she order those?

5040

6) 15 dogs are running in a race. In how many different ways can the first 3 places be won?

2730

7) Daffy must choose 8 flowers from a bucket that contains 24 daises and 15 roses.
   a) How many different ways are there to select the 8 flowers? 61,523,748
   b) If she needs to have 3 daisies and 5 roses, how many combinations are possible? 6,078,072

8) You randomly choose a card from a standard deck of 52 playing cards.
   a) Find the probability that you choose a 5 or a 6. 2/13
   b) Find the probability that you choose a King or a diamond. 4/13

9) A drawer contains 9 black socks and 8 blue socks.
   a) You choose one sock at random, replace it, and then choose a second sock at random. What is the probability that the first sock is blue and the second sock is black? 72/289
   b) You choose one sock at random, do not replace it, and then choose a second sock at random. What is the probability that both socks are black? 9/34

10) Below is a table of cats and dogs and their colors from Mockingbird Lane.
   a) If an animal is chosen at random, what is the probability that it is a cat? 17/38
   b) If an animal is chosen at random, what is the probability that it is spotted or a dog? 23/38
   c) Given that you are choosing a brown animal, what is the probability that it is cat? 3/7

	Cats	Dogs
Brown	6	8
Spotted	2	10
White	9	3

11) Determine whether the following situations involve a permutation or a combination.

d) Selecting 2 students from the class to attend a Math I conference. C

e) Assigning students seats on the bus on chorus trip to Ohio P

f) Selecting a president, vice-president, treasurer, and secretary of sophomore class P

12) If one person is randomly selected from a class that has 9 sophomores, 14 juniors and 3 seniors, what is the probability that the person selected is a junior? 7/13

13) For lunch tomorrow, the cafeteria is offering your choice of 5 entrées, 3 side dishes and 6 drinks. How many different lunches are possible if you choose 1 entrée, 1 side and 1 drink? 90

14) There are 5 cyclists in a race. If there are no ties, in how many different orders can the cyclists finish the race? 120

15) The 23 members of Mu Alpha Theta must choose officers. In how many different ways can the club choose a president, vice-president, secretary and treasurer? 212,520

16) Coach Elkins must choose 9 starters from a team of 15 players. How many different ways can the coach choose the starters? 5005

17) There are 21 freshmen and 19 sophomores on a students team that is helping out at the April 25th Community Service Day. Mrs. Molton needs to send 10 students to Must Ministries.

c) How many different ways are there to select a group of 10 students to send to Must Ministries? 847,660,528

d) If Mrs. Molton decides to send 3 freshmen and 1 sophomore, how many combinations of students are possible? 25,270

18) You randomly choose a card from a standard deck of 52 playing cards.

a) Find the probability that you choose a 3 or a black card. 7/13

b) Find the probability that you choose a 7 or an ace. 2/13

19) A box contains 3 yellow markers, 6 red markers.

a) You choose one marker at random, replace it, and then choose a second marker at random. What is the probability that the first marker is yellow and the second marker is red? 2/9

b) You choose one marker at random, do not replace it, and then choose a second marker at random. What is the probability that both markers are yellow? 1/12

20) You take an exam that has 4 possible answers for each question. You gain 2 points for each correct answer, lose 1 point for each incorrect answer, and do not gain or lose points for answers left blank. If you do not know the correct answer to a particular question, is it to your advantage to guess the answer? Skip