Review Lessons 10.1 – 10.3 Worksheet *Name:* _____

For the given configuration, determine how many different license plates are possible if (a) digits and letters can be repeated, and (b) digits and letters cannot be repeated.

1.) 2 letters followed by 3 digits

a.)

b.)

2.) 3 digits followed by 3 letters

a.)

b.)

Find the number of <u>distinguishable</u> permutations of the letters in the word.

3.) AWAY

4.) LETTER

5.) TENNESSEE

Find the number of possible 5-card hands that contain the cards specified. The cards are taken from a standard 52-card deck.

6.) 3 aces and 2 kings

7.) 5 clubs

8.) at least 3 jacks

9.) at most 2 queens

Use the binomial theorem to write the binomial expansion.

10.) $(2x - 3)^6$

11.) $(3x + y)^4$

A card is randomly drawn from a standard deck of 52 cards. Find the probability of drawing the given card. Express your probabilities as simplified fractions.

12.) The queen of hearts

13.) An ace

14.) A diamond

15.) A red card

16.) A card other than a 10

17.) The 6 of clubs

You randomly select a marble from a bag. The bag contains 8 black, 13 red, 7 white, and 12 blue marbles. Find the indicated odds.

18.) In favor of choosing blue

19.) In favor of choosing black or white

20.) Against choosing red

21.) Against choosing red or white

22.) Five representatives from a senior class of 280 students are to be chosen for the student council. In how many ways can students be chosen to represent the senior class on the student council?

23.) Your school newspaper has an editor-in-chief and an assistant editor-in-chief. The staff of the newspaper has 12 students. In how many ways can students be chosen for these two positions?

24.) A pizza parlor runs a special where you can buy a large pizza with 1 cheese, 1 vegetable, and 2 meats for $12. You have a choice of 5 cheeses, 10 vegetables, and 6 meats. How many different variations of the pizza special are possible?

25.) A baseball manager is determining the batting order for the team. The team has nine members, but the manager definitely wants the pitcher to bat last. How many different batting orders are possible?

26.) A television news director has 8 news stories to present of the evening news.

a.) How many different ways can the stories be presented?

b.) If only 3 of the stories will be presented, how many possible ways can a lead story, a second story, and a closing story be presented?