Name:_____ Chapter 3.7 Review Worksheet

Evaluate each of the following symbols.

1. $6!$

2. $\frac{6!}{4!\,2!}$

3. ${}_7P_3$

4. ${}_8C_5$

5. $\frac{12!}{3!(12-3)!}$

6. Each year, readers of a certain magazine are asked to rank the top 3 best dressed men among 12 candidates. In how many different ways can this be done?

7. The student body is electing a new president, vice president, secretary, and treasurer from nine students.

a. How many different ways can these students be elected?

b. What would the probability of Joe being elected president be if he was one of the candidates?

c. What is the probability that Jim would be elected into office if he was one of the candidates?

8. Four math books, three biology books, two music, and three economic books are to be arranged on a bookshelf.

a. How many different ways could these books be arranged if all the books are different?

b. How many different ways could the books be arranged if the books from the same subject are the same?

9. A baseball manager has 15 players on his team.

a. How many different ways can he select his starting 9 players?

b. At the end of season, he hands out MVP award, RBI award, Most Improved award, and Most homeruns award? How many different ways can the players get the awards if a player can get more than one award?

c. How many different ways can the letters BASEBALL be rearranged?

10. In a certain lottery, 5 numbers between 1 – 30 are drawn. If oder is not important how many different selections are possible?

11. What is the probability of you winning the lottery in question #10?

12. Your math teacher picks 5 problems from the 20 to grade. How many different combinations of problems could she have?

13. You write into a TV show to be selected as a winner to go see the opening of Breaking Dawn the movie.

a. If 50 people have written in and they take the best 5 with the first person being the best, how many different ways can they be selected?

b. How many ways could they be selected if they randomly pick 5 essays?

14. There are 10 members on the board of directors. If they need to form 4 committees, how many different committees are possible?

15. You are a hall monitor and need to pass out 5 call slips to different rooms. How many different ways could you deliver them?