Name: _____ Date: _____ Row: _____ Period: _____

Assignment #: _____

REVIEW WORKSHEET SECTIONS 12.1-12.2

****YOU MUST SHOW ALL WORK ON A SEPARATE SHEET OF PAPER****

1) You are choosing curtains, paint, and carpet for your room. You have 12 choices of curtains, 8 choices of paint, and 20 choices of carpeting. How many different ways can you choose curtains, paint and carpeting for your room?
2) Nine people in your class want to be on a 5-person bowling team to represent the class. How many different teams can be chosen?
3) Your school cafeteria offers three salads, four main courses, two vegetables, and three desserts. How many different lunches consisting of a salad, main course, a vegetable, and dessert are possible?
4) Five books are taken from a shelf and laid in a stack on a table. In how many different orders can the books be stacked?
5) A basketball team has five starting players. There are 13 girls on the team. In how many ways can the coach select players to start the game? (Assume each player can play each position.)
6) A baseball coach is determining the batting order for the team. The team has nine members, but the coach does not want the pitcher to be one of the first four to bat. How many batting orders are possible?
7) A high school needs four additional faculty members: two math teachers, a chemistry teacher, and a Spanish teacher. In how many ways can these positions be filled if there are six applicants for mathematicians, two for chemistry, and ten applicants for Spanish?
8) Next year you are taking math, English, history, keyboarding, chemistry, physics, and physical education. Each class is offered during each of the seven periods in the day. In how many different orders can you schedule your classes?
9) In a dog show, how many ways can four Pomeranians, five golden retrievers, two Great Pyrenees, and six English terriers line up in front of the judges if the dogs of the same breed are considered identical? In how many different ways can three dogs win first, second, and third place?
10) A pizza shop offers twelve different toppings. How many different three-topping pizzas can be formed with the twelve toppings? (Assume no topping is used twice.)
11) An ice cream shop has a choice of ten toppings. Suppose you can afford at most four toppings. How many different types of ice cream sundaes can you order?

12-15: For the given configuration, determine how many different computer passwords are possible if (a) digits and letters can be repeated, and (b) digits and letters cannot be repeated.

12) 2 letters followed by 4 digits

13) 1 letter followed by 5 digits

14) 3 digits followed by 3 letters

15) 1 digit followed by 5 letters

16-19: Find the number of permutations. Show work using the formula.

16) ${}_{10}P_8$

17) ${}_5P_0$

18) ${}_6P_1$

19) ${}_6P_6$

20-27: Find the number of distinguishable permutations of the letters in the word.

20) ENGLISH

21) NORTH

22) MATH

23) BELL

24) EYE

25) ALPHABET

26) OKLAHOMA

27) CALIFORNIA

28-32: Find the number of possible 3-card hands that contain the cards specified.

28) 3 red cards

29) 3 aces

30) 3 face cards

31) 3 hearts

32) 3 of one kind (kings, queens, and so on)

33) Find the coefficient of x^4 in the expansion of $(2x+1)^7$.

34) Find the coefficient of x^5 in the expansion of $(x+3y)^{10}$.

35-38: Find the number of possible 5-card hands that contain the cards specified.

35) 5 black cards

36) 3 of one kind (kings, queens, and so on) and 2 others

37) 5 cards, none of which are face cards (either kings, queens, or jacks)

38) 5 cards of the same suit

39-42: Find the number of combinations. Show work using the formula

39) ${}_8C_5$

40) ${}_{10}C_3$

41) ${}_{10}C_{10}$

42) ${}_{12}C_5$

43-46: Expand the power of the binomial using Pascal's Triangle.

43) $(2x+3)^3$

44) $(x-4y)^4$

45) $(2x-y^2)^6$

46) $(x^3+y)^7$