Algebra 2 Honors
Ch 12 Review

Name_____

1-13: Give answers as integers or fractions in simplest form.

1. The Cheer squad is selecting new warm-ups. There are 3 styles of jackets, 4 styles of pants, and 6 styles of lettering available. How many ways can jacket, pants, and lettering be chosen?

2. There are ten questions on a true-false test. If you answer all ten questions, how many ways can you complete the test?

3. Seven books need to be stacked on a shelf. In how many different orders can the books be stacked,
a) if the smallest book must be on the top of the stack?

b) if there is only enough room to stack five of the books?

4. In how many ways can 3 identical diamonds, 2 identical rubies, and 4 identical sapphires be arranged in a display case?

5. How many positive multiples of 5 less than 600 can be formed using the digits 2, 3, 4, 5, 6, if digits may be repeated?

6. An ice cream store offers 20 different flavors of ice cream and 12 different toppings. Find the number of ways you could choose:
a) 2 flavors of ice cream and 3 different toppings?

b) at most 2 toppings for your ice cream?

7. Use Pascal's triangle to expand and simplify $\left(x^2-3y\right)^5$.

8. Find and simplify the third term of $\left(2x+5\right)^{12}$.

9. Two six-sided dice are rolled. Find the probability that:
a) the sum is a multiple of 3 or less than 5
b) the sum is not 2 or 12

10. Of 11 persons attending a conference, 4 are executives and 6 are women. Three executives are women. Find the probability that an attendee selected at random is:
a) an executive or a woman
b) not an executive

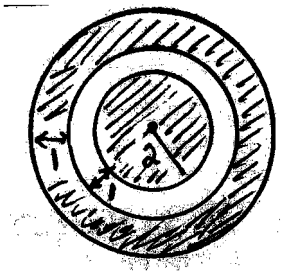
11. A cooler contains 5 cans of Coke, 4 cans of Dr. Pepper, and 2 cans of Sprite, buried under a layer of ice. Find the probability of choosing at random:
a) a Coke and a Sprite, with replacement
b) a Coke, a Dr. Pepper, and another Coke, without replacement.

12. Seven letters are chosen randomly, one at a time, from the letters in the word ENGLISH. Find the probability that the first letter is a vowel.

13. Three green marbles, 4 red marbles, and 5 blue marbles are in a jar. Find the probability of randomly choosing:
a) two blue marbles at the same time

b) at least 1 green marble, when 3 marbles are chosen at the same time

14-19: Give decimal answers as directed.
14. Find the probability that a dart thrown at the target shown hits somewhere in the shaded area. Round the answer to the nearest thousandth.



15. Five cards are selected from a 52-card deck. Find the probability of selecting 3 of one kind and 2 of a different kind (this is called a full house). Round the answer to the nearest ten-thousandth.

16. Fifty-four percent of a company's employees are men. Forty-seven percent of the men and thirty-five percent of the women exercise regularly. Find the probability that a randomly selected employee does not exercise regularly. Give the answer as a percent, rounded to the nearest tenth of a percent.

17. An automobile safety researcher claims that 1 in 10 automobile accidents is caused by driver fatigue. Find the probability that at least 3 of 5 accidents are caused by driver fatigue. Round the answer to the nearest thousandth.

18. The heights of adult Great Danes are normally distributed with a mean of 31 inches and a standards deviation of 1 inch. Find the probability that 4 randomly selected adult Great Danes are at most 33 inches tall. Round the answer to the nearest thousandth.

19. Suppose that in a California poll, 75% of all households have cable or satellite TV service. If you conduct a random survey of 600 households, what is the probability that at least 428 households have cable or satellite TV? Round the answer to the nearest thousandth.