

Do all work on lined paper. Staple this cover sheet on top.

1. In how many different orders can Andrea, Brian, Cody, and Donna play the piano?
2. How many ways can the letters in the word *scrub* be arranged if the first letter must be *s*?
3. In how many ways can 3 blue, 3 red, and 4 white baseball caps be arranged?
4. In how many ways can 7 differently colored chairs be arranged in a circle?
5. How many ways can 6 charms be arranged on a bracelet if the bracelet has a clasp?
6. A box contains 5 roses, 8 carnations, and 4 lilies. How many ways can 2 roses, 2 carnations, and 1 lily be selected?
7. Find the value of  $n$  in the equation  $C(12, 9) = C(n, 3)$ .
8. How many 4-member committees can be formed from a group of 10 people?
9. Laura has 16 antique dolls in her collection. Four of the dolls have hats. If Laura selects 2 dolls at random, what is the probability that at least one of them will have a hat?
10. Of the 20 animals at the animal shelter, 12 are dogs. Two animals are chosen at random. What are the odds that both are dogs?
11. Each of three students in an art class is given a box of 10 differently colored pencils. If each student selects one pencil at random from his or her box, what is the probability that all three will select orange pencils?
12. 70% of the time Willis waits for his ride to school. 20% of the time he waits for his ride home. Find the probability he will wait for his rides to and from school today.

13. Two dice are tossed. What is the probability that the sum will be either 2 or 11?
14. Two cards are drawn from a standard deck of cards. Find the probability that both are either black or both are queens?
15. Donna has 10 bottles of regular soft drink and 8 bottles of diet soft drink. If she selects three bottles at random to take to a party, what is the probability that she will take exactly 2 bottles of regular soft drink?
16. Two coins are tossed. What is the probability that both coins show heads if one coin shows *tail* *first* on *head*.
17. A pair of dice is rolled. Find the probability that the sum is 10 given that the sum is greater than or equal to 9.
18. Wally hit the bullseyes with 4 of his last 12 darts. What is the probability that both of his next two darts will be bullseyes?
19. Suppose you guess at all 8 questions on a true/false test. What is the probability that you will get exactly 7 correct?
20. Yolanda guessed at all 8 questions on a true/false test. What is the probability that she will get at least 7 correct?

Row # \_\_\_\_\_

Name \_\_\_\_\_

Period \_\_\_\_\_

Directions: Do all of your work on a sheet of lined paper

Pre-Calculus Ch 14 Review

1. Find the number of six-letter permutations from the word: SYZYGY
2. How many different outcomes are possible for seven people seated in chairs arranged in a line? In a circle?
3. If the probability that an event will occur is  $\frac{1}{4}$ , then what is the probability that the event will not occur? What are the odds that the event will occur?
4. A jar contains exactly 10 red marbles, 8 white marbles, and 12 blue marbles. A marble is removed at random from the jar. The choice is identified, the marble is returned to the jar and a second marble is drawn. Find the probability:  
A) That both marbles are red  
B) That neither marble is red  
C) That the first marble is red and the 2<sup>nd</sup> one is blue
5. A jar contains exactly 10 red marbles, 8 white marbles, and 12 blue marbles. A marble is removed at random from the jar. The choice is identified and not returned to the jar. Then, a second marble is drawn. Find the probability:  
A) That both marbles are red  
B) That neither is red  
C) That the first marble is red and the second is blue
6. In a family of 6 children, what is the probability of having exactly one male child?
7. In how many ways can 7 children be arranged on the 7 horses of the merry-go-round at the Amusement Park?
8. If you roll 2 dice, what is the probability that the sum is 6 or 8?
9. If the odds are 7 to 5 for an event to occur, what is the probability that the event will occur?
10. If the probability of an event occurring is  $0.7$ , what are the odds of that event occurring?
11. If 2 dice are thrown, what are the odds of obtaining a 7? An 11?  
A) 7 or 11?
12. If you choose one card out of a standard deck of cards, what is the probability that the card is not an ace?
13. A ball is picked at random from a box containing 3 white, 5 red, 8 blue, and 7 green balls. Find the probability that:  
A) A green ball is picked  
B) A white ball is picked  
C) Neither red nor green ball is picked  
D) Red or white or blue ball is picked  
E) A green or blue ball is picked
14. A box contains 10 slips of paper numbered from 1 to 10. If 3 slips are drawn in succession with replacement, what is the probability that all 3 of them have the same number?
15. Through a mix-up on the production line, 6 defective refrigerators were shipped out with 44 good ones. If 5 are selected at random, what is the probability that all 5 are defective?
16. Two cards are drawn at random from a standard deck of cards. What is the probability that the first card is a heart and the second is red?
17. From a box containing 3 white, 2 green and 1 yellow ball, two balls are drawn at a time without replacing the first before the second is drawn. Find the probability that one white and one yellow ball are drawn.
18. If 2 cards are drawn from a 52-card deck, what is the probability that the second card is a queen?
19. If a coin is tossed 10 times, how many different outcomes are possible?
20. An urn contains 7 white balls and 3 red balls. Three balls are selected. In how many ways can the 3 balls be drawn from the total of 10 balls:  
A) If all 3 balls are white  
B) If all 3 balls are red  
C) If 2 balls are white and 1 is red
21. How many ways can 3 red, 4 yellow, and 5 blue bulbs be arranged in a string of Christmas tree lights with 12 sockets?
22. How many different 9 letter word arrangements can be formed from the letters in the word ECONOMICS
23. A group consists of 5 men and 8 women. A committee of 4 is to be formed from this group, and policy dictates that at least 1 woman be on this committee  
A) How many committees can be formed that contain exactly 1 man?  
B) How many committees can be formed that contain exactly 2 women?  
C) How many committees can be formed that contain at least 1 man?