



Probability

Name _____

1. A fair coin is thrown in the air four times. If the coin lands with the head up on the first three tosses, what is the probability that the coin will land with the head up on the fourth toss? [1] 0 [2] $1/16$ [3] $1/8$ [4] $1/2$
2. How many different three-digit numbers can be made from the digits 6, 8, and 9 if each digit appears only once in the arrangement? [1] 2 [2] 6 [3] 12 [4] 120
3. How many different 6-letter arrangements can be formed using the letters in the word ABSENT, if each letter is used only once? [1] 6 [2] 36 [3] 720 [4] 46,656
4. If $P(E)$ is the probability that an event will occur, which of the following must be false? [1] $P(E) = 1$ [2] $P(E) = 1/2$ [3] $P(E) = 1/3$ [4] $P(E) = -1$
5. Evaluate $1! + 2! + 3!$ [1] 5 [2] 6 [3] 9 [4] 10
6. You know that the extension of a private telephone number is 343, but you have forgotten the last 4 digits. You can only recall that the last 4 digits are 3, 6, 8, and 9, but you do not know the order. What is the maximum number of telephone calls you will need to make in order to dial the correct number? [1] 4 [2] 18 [3] 20 [4] 24
7. A standard deck of 52 cards is shuffled. What is the probability of choosing the 5 of diamonds? [1] $1/5$ [2] $1/13$ [3] $5/52$ [4] $1/52$
8. A die is rolled. What is the probability that the number rolled is greater than 2 and even? [1] $1/2$ [2] $1/3$ [3] $2/3$ [4] $5/6$
9. A pair of dice is rolled. A possible event is rolling a multiple of 5. What is the probability of the complement of this event? [1] $2/36$ [2] $12/36$ [3] $29/36$ [4] $32/36$

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

7. _____

8. _____

9. _____

10. Your state issues license plates consisting of letters and numbers. There are 26 letters and the letters may be repeated. There are 10 digits and the digits may be repeated. How many possible license plates can be issued with two letters followed by three numbers?
 [1] 25,000 [2] 67,600 [3] 250,000 [4] 676,000 10. _____
11. How many elements are in the sample space of rolling one die?
 [1] 6 [2] 12 [3] 24 [4] 36 11. _____
12. Evaluate $(9 - 4)!$ [1] 362,880 [2] 120 [3] 24 [4] 6 12. _____
13. How many different 5-letter arrangements are there of the letters in the word DIGIT? [1] 5 [2] 30 [3] 60 [4] 120 13. _____
14. Two cards are drawn at random from a standard deck of 52 cards, without replacement. What is the probability of drawing a 7 and a king in that order?
 [1] $4/51$ [2] $4/52$ [3] $4/256$ [4] $4/663$ 14. _____
15. A movie theater sells 3 sizes of popcorn (small, medium, and large) with 3 choices of toppings (no butter, butter, extra butter). How many possible ways can a bag of popcorn be purchased?
 [1] 1 [2] 3 [3] 9 [4] 27 15. _____
16. A bottle contains 8 marbles: 3 are red and 5 are blue. You are to take a marble from the bottle without looking. What is the probability that you will pick a red marble? [1] $1/3$ [2] $3/8$ [3] $5/8$ [4] $3/5$ 16. _____
17. A pair of dice is rolled and the resulting number is odd. Which of the following events is the complement of this event?
 [1] A number greater than 8 is rolled [3] A number less than 5 is rolled
 [2] An even number is rolled [4] A multiple of 5 is rolled 17. _____
18. You roll two dice. The first die shows a ONE and the other die rolls under the table and you cannot see it. **Now**, what is the probability that both die show ONE? [1] $1:3$ [2] $1:6$ [3] $1:36$ [4] $9:36$ 18. _____
19. From a standard deck of cards, one card is drawn. What is the probability that the card is black **and** a jack?
 [1] $1/2$ [2] $1/13$ [3] $1/26$ [4] $1/52$ 19. _____
20. A piggybank contains 2 quarters, 3 dimes, 4 nickels, and 5 pennies. One coin is removed at random. What is the probability that the coin is a dime **or** a nickel?
 [1] $3/14$ [2] $4/14$ [3] $7/14$ [4] $1/7$ 20. _____