Disclaimer

Chapter 5 Test

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DIRECTIONS: For this multiple-choice test, select the most appropriate answer for each statement or question.

1. Probability is the _____.
   a) total number of possible outcomes
   b) subset of the sample space
   c) total number of sample spaces
   d) likelihood of an event occurring

2. Which of the following is not a valid value of a probability?
   a) 1.2
   b) 0
   c) 0.98
   d) 0.666

3. What is the law of large numbers?
   a) Empirical probability approaches 1 when the number of times the experiment is repeated increases.
   b) Empirical probability approaches subjective probability when the number of times the experiment is repeated increases.
   c) Empirical probability approaches classical probability when the number of times the experiment is repeated increases.
   d) Empirical probability approaches infinity when the number of times the experiment is repeated increases.

4. A 25-question multiple-choice test has 5 options for each question. If answers are randomly selected, how many correct answers are expected?
   a) 1
   b) 5
   c) 25
   d) 0

5. There are 52 cards in a deck of cards. If one card is selected at random, what is the probability of selecting an ace from a deck of cards?
   a) 0.077
   b) 0.923
   c) 0.019
   d) 0.5

6. There are 52 cards in a deck of cards. If one card is selected at random, what is the probability of not selecting a jack from a deck of cards?
   a) 0.077
   b) 0.038
   c) 0.923
   d) 0.308

7. There are 52 cards in a deck of cards. If one card is selected at random, what is the probability of selecting an ace or a queen from a deck of cards?
   a) 0.077
   b) 0.308
   c) 0.462
   d) 0.154

8. There are 52 cards in a deck of cards. If one card is selected at random, what is the probability of selecting a four or a club from a deck of cards?
   a) 0.327
   b) 0.308
   c) 0.25
   d) 0.019

9. If P(A) = 0.75 and P(B) = 0.12, what is P(A or B) considering the two events are mutually exclusive?
   a) 0.87
   b) 0.09
   c) 0.63
   d) 0.16

10. At a fitness center, 30% of members work out with weights. 50% of members participate in a fitness class. 12% of members work out with weights and participate in a fitness class. What is the probability that a randomly selected member works out with weights or participates in a fitness class?
    a) 0.80
    b) 0.68
    c) 0.92
    d) 0.12

11. There are 52 cards in a deck of cards. If two cards are selected at random, what is the probability of selecting two kings from a deck of cards with replacement?
    a) 0.0044
    b) 0.0059
    c) 0.0045
    d) 0.1538

12. There are 52 cards in a deck of cards. If three cards are selected at random, what is the probability of selecting three hearts from a deck of cards without replacement?
    a) 0.0577
    b) 0.0156
    c) 0.75
    d) 0.0129

13. If P(A) = 0.33 and P(B) = 0.27, what is P(A and B) considering the two events are independent?
    a) 0.8299
    b) 0.0600
    c) 0.6033
    d) 0.0891

14. In a sample of 10 people, 6 are women and 4 are men. Three people are randomly selected to participate in a study. What is the probability that all three are women?
    a) 0.30
    b) 0.167
    c) 0.216
    d) 0.60

15. Data from a sample of 100 men and 100 women are listed below in regards to whether they have siblings or not. If a person is randomly selected, what is the probability that the person is an only child?

	I Have a Sibling	I'm an Only Child
Men	67	33
Women	75	25

   a) 0.29
   b) 0.58
   c) 0.165
   d) 0.125

16. The secret code for a security gate has 4 digits. How many combinations are possible?
   a) 40
   b) 10,000
   c) 36
   d) 6561

17. In how many ways can 8 horses finish a race?
   a) 40,320
   b) 80
   c) 1000
   d) 8

18. A president and vice-president are to be selected from a group of 12 members. How many different combinations can be formed?
    a) 24
    b) 66
    c) 132
    d) 479,001,600

19. Four students out of 15 are to be selected to participate on a team. How many team combinations can be formed?
    a) 60
    b) 32,720
    c) 12
    d) 1365

20. Counting rules are used to determine the number of possible outcomes in a sample space.
    a) True
    b) False

Answers

1. Likelihood of an event occurring
2. 1.2
3. Empirical probability approaches classical probability when the number of times the experiment is repeated increases.
4. 5
5. 0.077
6. 0.923
7. 0.154
8. 0.308
9. 0.87
10. 0.68
11. 0.0059
12. 0.0129
13. 0.0891
14. 0.167
15. 0.29
16. 10,000
17. 40,320
18. 132
19. 1365
20. True