Quiz 4.8: Experimental and Theoretical Probability

Multiple Choice: *Choose the letter that corresponds to the correct answer. Write the answer in your answer sheet.*

1. Which of the following is the formula for determining the experimental probability of an event?

   A. $P(E) = \frac{\sum f}{f}$ B. $P(E) = \frac{f}{\sum f}$ C. $P(E) = \frac{n(S)}{n(E)}$ D. $P(E) = \frac{n(E)}{n(S)}$

2. Which of the following is the formula for determining the theoretical probability of an event?

   A. $P(E) = \frac{\sum f}{f}$ B. $P(E) = \frac{f}{\sum f}$ C. $P(E) = \frac{n(S)}{n(E)}$ D. $P(E) = \frac{n(E)}{n(S)}$

3. The probability that a certain outcome will occur as determined through reasoning or calculation is called:

   A. Experimental Probability B. Reasonable Probability C. Sample Probability D. Theoretical Probability

4. Bernadette tossed a coin 150 times and got 81 heads and 69 tails. The probability of getting a head is 0.54.

   A. Experimental Probability B. Reasonable Probability C. Sample Probability D. Theoretical Probability

5. The probability of choosing a senior from 25 seniors and 25 juniors is $\frac{1}{2}$. What kind of probability is this?

   A. Experimental Probability B. Reasonable Probability C. Sample Probability D. Theoretical Probability

6. The probability of drawing a red ball from a jar that contains 12 red balls, 15 blue balls, and 7 white balls is 0.353. What kind of probability is this?

   A. Experimental Probability B. Reasonable Probability C. Sample Probability D. Theoretical Probability

7. A coin was tossed 120 times. It fell on tails 45 times. What is the experimental probability that it falls on heads?

   A. $\frac{1}{8}$ B. $\frac{3}{8}$ C. $\frac{5}{8}$ D. $\frac{7}{8}$

8. A 52-card pack is well shuffled and then one card is drawn from the top of the pack. Determine the probability that it is a red face card.

   A. $\frac{3}{26}$ B. $\frac{5}{26}$ C. $\frac{7}{26}$ D. $\frac{9}{26}$

9. A 52-card pack is well shuffled and then one card is drawn from the top of the pack. Determine the probability that it is a red number card.

   A. $\frac{1}{2}$ B. $\frac{1}{3}$ C. $\frac{13}{52}$ D. $\frac{25}{52}$

10. A pair of coin is tossed. What is the probability of getting two tails?

    A. $\frac{1}{2}$ B. $\frac{1}{3}$ C. $\frac{1}{4}$ D. $\frac{3}{4}$

11. A coin was tossed 100 times. It fell on tails 48 times. What is the probability that a tail shows up?

    A. $\frac{1}{2}$ B. $\frac{12}{25}$ C. $\frac{1}{4}$ D. $\frac{13}{25}$

12. If a letter is chosen at random from the word PERSEVERANCE, what is the probability that the letter chosen is E?

    A. $\frac{1}{3}$ B. $\frac{1}{4}$ C. $\frac{1}{6}$ D. $\frac{1}{12}$

13. A die is rolled. What is the probability of getting a number greater than 4?

    A. $\frac{1}{2}$ B. $\frac{1}{3}$ C. $\frac{1}{6}$ D. $\frac{2}{3}$

14. Choosing a month from a year, what is the probability of selecting a month with 31 days?

    A. $\frac{1}{3}$ B. $\frac{1}{12}$ C. $\frac{7}{12}$ D. $\frac{12}{31}$

15. What is the probability of getting a black face card from a deck of 52 cards?

    A. $\frac{2}{13}$ B. $\frac{3}{13}$ C. $\frac{3}{26}$ D. $\frac{3}{52}$

16. The sides of a cube are numbered 11 to 16. If Renz rolled the cube once, what is the probability of rolling a composite number?

    A. $\frac{1}{2}$ B. $\frac{2}{3}$ C. $\frac{1}{6}$ D. $\frac{5}{6}$

Answer Key

1. Which of the following is the formula for determining the experimental probability of an event?

   Solution:

   A. $P(E) = \frac{\sum f}{f}$ B. $P(E) = \frac{f}{\sum f}$ C. $P(E) = \frac{n(S)}{n(E)}$ D. $P(E) = \frac{n(E)}{n(S)}$

2. Which of the following is the formula for determining the theoretical probability of an event?

   Solution:

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