

Quiz 4.6: Basic Concepts of Probability

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

1. A result of a chance experiment is called:
A. Event B. Outcome C. Probability D. Sample Space
2. What does it mean when outcomes are equally likely?
A. The list of all the possible outcomes of an experiment
B. Each outcome of an experiment occurs with equal probability
C. An activity which can be repeated over and over again and which have well-defined results
D. Any combination of outcomes
3. What is probability?
A. A measure that is associated with how certain we are of outcomes of a particular experiment or activity
B. The list of all the possible outcomes of an experiment
C. Any combination of outcomes
D. An activity which can be repeated over and over again and which have well-defined results
4. What is a sample space?
A. A measure that is associated with how certain we are of outcomes of a particular experiment or activity
B. The list of all the possible outcomes of an experiment
C. Any combination of outcomes
D. An activity which can be repeated over and over again and which have well-defined results
5. A pair of dice is rolled. If $I = \{\text{the two numbers whose sum is an even prime}\}$, what are the elements of I ?
A. $I = \{(1, 1)\}$ B. $I = \{(2, 2)\}$ C. $I = \{(1, 1), (2, 2)\}$ D. $I = \{(1, 2), (3, 5)\}$
6. A toss of a die and a coin is an example of:
A. Chance Experiment B. Event C. Outcome D. Sample Space
7. What are the ways to represent a sample space?
A. List the possible outcomes C. Create a Venn diagram
B. Create a tree diagram D. List the events
8. Getting a head or tail and an odd number after tossing a coin and a die is an example of:
A. Chance Experiment B. Event C. Outcome D. Sample Space
9. What is the sample space of tossing a coin and a die?
A. $\{H1, H2, H3, H4, H5, H6, T1, T2, T3, T4, T5, T6\}$
B. $\{HHH, HHT, HTH, HTT, THH, THT, TTH, TTT\}$
C. $\{HH, HT, TH, TT\}$
D. $\{H, T, 1, 2, 3, 4, 5, 6\}$
10. A die and a coin are tossed. If $C = \{\text{an odd number and tails}\}$, what are the elements of event C ?
A. $C = \{1T, 2T, 3T\}$ B. $C = \{1H, 3H, 5H\}$ C. $C = \{1H, 2H, 3H\}$ D. $C = \{1T, 3T, 5T\}$

Answer Key

1. A result of a chance experiment is called:

Solution:

- A. Event B. **Outcome** C. Probability D. Sample Space

2. What does it mean when outcomes are equally likely?

Solution:

- A. The list of all the possible outcomes of an experiment
B. **Each outcome of an experiment occurs with equal probability**
C. An activity which can be repeated over and over again and which have well-defined results
D. Any combination of outcomes

3. What is probability?

Solution:

- A. **A measure that is associated with how certain we are of outcomes of a particular experiment or activity**
B. The list of all the possible outcomes of an experiment
C. Any combination of outcomes
D. An activity which can be repeated over and over again and which have well-defined results

4. What is a sample space?

Solution:

- A. A measure that is associated with how certain we are of outcomes of a particular experiment or activity
B. **The list of all the possible outcomes of an experiment**
C. Any combination of outcomes
D. An activity which can be repeated over and over again and which have well-defined results

5. A pair of dice is rolled. If $I = \{\text{the two numbers whose sum is an even prime}\}$, what are the elements of I ?

Solution:

- A. **$I = \{(1, 1)\}$** B. $I = \{(2, 2)\}$ C. $I = \{(1, 1), (2, 2)\}$ D. $I = \{(1, 2), (3, 5)\}$

6. A toss of a die and a coin is an example of:

Solution:

- A. **Chance Experiment** B. Event C. Outcome D. Sample Space

7. What are the ways to represent a sample space?

Solution:

- A. List the possible outcomes C. Create a Venn diagram
B. Create a tree diagram D. **List the events**

8. Getting a head or tail and an odd number after tossing a coin and a die is an example of:

Solution:

- A. Chance Experiment B. **Event** C. Outcome D. Sample Space

9. What is the sample space of tossing a coin and a die?

Solution:

- A. **$\{H1, H2, H3, H4, H5, H6, T1, T2, T3, T4, T5, T6\}$** {HH, HT, TH, TT}
B. {HHH, HHT, HTH, HTT, THH, THT, TTH, TTT}, D. {H, T, 1, 2, 3, 4, 5, 6}

10. A die and a coin are tossed. If $C = \{\text{an odd number and tails}\}$, what are the elements of event C ?

Solution:

A. $C = \{1T, 2T, 3T\}$

B. $C = \{1H, 3H, 5H\}$

C. $C = \{1H, 2H, 3H\}$

D. $C = \{1T, 3T, 5T\}$