Week 03 Quiz: Probability

Problem 1

A number between 0 and 1 that is used to measure uncertainty is called:

(a) Random variable
(b) Trial
(c) Simple event
(d) Probability

Answer: D)

Problem 2.

Probability lies between:

(a) -1 and +1
(b) 0 and 1
(c) 0 and n
(d) 0 and ∞

Answer: b).

Problem 3
A random experiment contains:

(a) At least one outcome
(b) At least two outcomes
(c) At most one outcome
(d) At most two outcomes

Answer: B)

Problem 4

A set of all possible outcomes of an experiment is called:
(a) Combination
(b) Sample point
(c) Sample space
(d) Compound event

Answer: C)

Problem 5

The events that have no experimental outcomes in common are called:

(a) Equally likely events
(b) Exhaustive events
(c) Mutually exclusive events
(d) Independent events

Answer: C)

Problem 6

When each outcome of a sample space is as likely to occur as any other, the outcomes are called:

(a) Exhaustive
(b) Mutually exclusive
(c) Equally likely
(d) Not mutually exclusive

Answer: C)

Problem 7

If A is any event in S and $\bar{A}$ its complement, then P($\bar{A}$) is equal to:
(a) 1
(b) 0
(c) 1- A
(d) 1 - P($\bar{A}$)

Answer: D)

Problem 8

The term 'sample space' is used for:
(a) All possible outcomes
(b) All possible coins
(c) Probability
(d) Sample

Answer: **A)**

Problem 9

A balance die is rolled, the probability of getting an odd number is:
(a) 1/2
(b) 1/4
(c) 1/6
(d) 1/36

Answer: A)

Problem 10

Given P(A) = 0.4, P(B) = 0.5 and P(A∪B)=0.9,then:
(a) A and B are not mutually exclusive events
(b) A and B are equally likely events
(c) A and B are independent events
(d) A and B are mutually exclusive events

Answer: D)

Problem 11

If the random variable X has a uniform distribution between 40 and 50, then
 P(35 < X<45) is:
a. 1.0
b. 0.5
c. 0.1
d. undefined.

Answer: B)

Problem 12

 Consider the following probability distribution:

x	0	1	2	3
p(x)	.12	.38	.4	?

Assuming 0, 1, 2, and 3 are all the possible values of x, find p(3).

A). 0.12
B). 0.10
C). 0.45
D). 0.50

Answer B

Problem 13

Consider the following probability distribution.

X	1	2	3	4	5	6
$P(X)$	0.3	0.2	0.1	0.1	0.1	0.2

Find the probability P(2≤ X ≤ 4).

A).   0.2
B).   0.4
C).   0.1
D).   0.3

Answer B.

Problem 14

Suppose that, among 10 families, 4 families own a dog, 3 families own a cat, and 4 families own neither. This information is summarized in the following table

	a dog	no dog	total
a cat	1	2	3
no cat	3	4	7
total	4	6	10

A family is chosen at random among the same 10 families as on the above table. What is the probability they own a cat

A). 0.2
B). 0.3
C). 0.4
D). 0.1

Answer B. (1+2)/10 = 0.3

Problem 15

The total duration of baseball games in the major league in the 2011 season is uniformly distributed between 447 hours and 521 hours inclusive. Randomly select a game in the major league, what is the probability that its total duration is 500?

A). (500-447)/74
B). 0
C). (521-500)/74
D). (500-521)/74

Answer B. The probability of continuous distribution at any specific value is always 0.