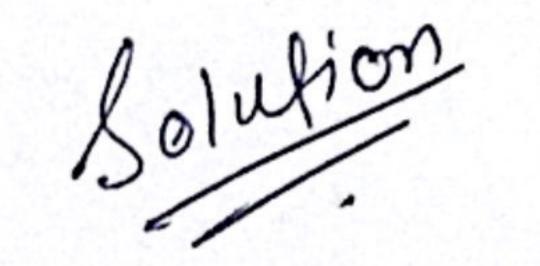
Quiz 2 Probability & Statistics-Fall 2023



Student ID _____

Question 1: Suppose one card is drawn from an ordinary deck of 52 playing cards, what is the probability that it will be a red card? [2 marks]

Let

$$P(A) = 2t \text{ red Cards}$$

$$= 26 = 0.5$$

$$= 52$$

Question 2: Suppose you will win the game if you pick a red marble from a jar containing 4 red and 3 black marbles and you get heads on the toss of a coin. Find the probability of winning. [2 marks]

Total marbles = 7
$$P(A) = 4 \text{ red Som } P(A) = \frac{4}{7}$$

$$P(B) = 1 \text{ red So, } P(B) = \frac{1}{2}$$

$$\text{Wining } P^{rop} = \left(\frac{4}{7}\right) \times \left(\frac{1}{2}\right) = \frac{\frac{4}{7}}{\frac{14}{7}} = \frac{\frac{2}{7}}{\frac{4}{7}}$$

Question 3: A student goes to the Park. The probability that she Chooses [3 marks]

- i) A lunch is 0.40,
- ii) A movie is 0.30, and
- iii) Both lunch and movie is 0.20.

What is the probability that the student chooses a lunch, movie, or both?

Let
$$P(A) = 0.40 & P(B) = 0.30 & P(A \cap B) = 0.20$$

$$P = P(A) + P(B) - P(A \cap B)$$

$$= 0.40 + 0.30 - 0.20$$

$$= 0.50$$

Question 4: An experiment is setup to first roll a die, followed by spinning a spinner. As shown, the die is a six-sided die and the spinner has four equal divisions labeled 1, 2, 3 and 4. Set A will contain all possibilities of the die rolling an even number and the spinner showing 4. Set B will contain all possibilities of the die and the spinner showing the same value. Find the probability of an outcome belonging to set A but not in set B [3 marks]

$$P(A) = A_{2}(2,4), (4,4), (6,4))$$

$$B = (1,1), (2,2), (3,3), (4,2), (4,2)$$

$$P(B) = 4/24 = 1/6$$

$$P(A \cap B) = 1$$

$$24 = 4$$