

Topic: Probability –**Day 1 Question 1**

(a) State in words the relationship between two events R and S when $P(R \cap S) = 0$.

(1)

The events A and B are independent with $P(A) = \frac{1}{4}$ and $P(A \cup B) = \frac{2}{3}$.

Find

(b) $P(B)$,

(4)

(c) $P(A' \cap B)$,

(2)

(d) $P(B' | A)$.

(2)

(Total 9 Marks)

Day 1 Question 2

Given that

$$P(A) = 0.35, P(B) = 0.45 \text{ and } P(A \cap B) = 0.13,$$

find

(a) $P(A \cup B)$,

(2)

(b) $P(A' | B')$.

(2)

The event C has $P(C) = 0.20$.

The events A and C are mutually exclusive and the events B and C are independent.

(c) Find $P(B \cap C)$.

(2)

(d) Draw a Venn diagram to illustrate the events A , B and C and the probabilities for each region.

(4)

(e) Find $P([B \cup C]')$.

(2)

(Total 12 Marks)