

Assignment 4

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Also $X = 0$, $X = 1$ and $X = 2$ cover all the outcomes of a trial.

I. PROBLEM-CBSE-9TH Q)EXAMPLE 2

Q)Two coins are tossed simultaneously 500 times, and we get

Two heads : 105 times

One head : 275 times

No head : 120 times

Find the probability of occurrence of each of these events.

II. SOLUTION

Let $X_1 \in \{0,1\}$ represent the first coin and $X_2 \in \{0,1\}$ represent the second coin. Where 0 represents Head and 1 represents Tail.

$$X = X_1 + X_2 \quad (1)$$

Hence $X \in \{0,1,2\}$.

Where $X = 0$ denotes occurrence of two heads, $X = 1$ denotes occurrence of one head and $X = 2$ denotes the occurrence of no head. Then,

$$Pr(X = 0) = \frac{105}{500} = 0.21 \quad (2)$$

$$Pr(X = 1) = \frac{275}{500} = 0.55 \quad (3)$$

$$Pr(X = 2) = \frac{120}{500} = 0.24 \quad (4)$$

Observe that

$$Pr(X = 0) + Pr(X = 1) + Pr(X = 2) = 1$$