

AI1110 ASSIGNMENT-4

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Abstract—This document contains the solution for Assignment 4 (NCERT GRADE 10 CHAPTER 15 Example 9)

EXAMPLE 9 :

Harpreet tosses two different coins simultaneously (say one is ₹1 and other is ₹2). What is the probability that she gets atleast one head ?

Solution :

Let $\Pr(x)$ be the probability of getting head

let $\Pr(X)$ be the probability of getting atleast one head . $\Pr(X = 1)$ represents atleast one head and $\Pr(X = 2)$ both the coins should get heads

so

$$\Pr(X = x) = \binom{n}{x} \times p^x \times (1 - p)^{n-x} \quad (1)$$

where n is number of coins tossed and x is the number of required outcomes and p is the probability of the coin tossed.

here n = 2 and p = $\frac{1}{2}$, therefore

$$\Pr(X \geq 1) = \Pr(X = 1) + \Pr(X = 2) \quad (2)$$

$$\Pr(X \geq 1) = \binom{2}{1} \frac{1}{2} \times \frac{1}{2} + \binom{2}{2} \frac{1}{2^2} \quad (3)$$

$$\Pr(X \geq 1) = \frac{3}{4} \quad (4)$$