

AI1110 ASSIGNMENT-3

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Abstract—This document contains the solution for Assignment 4 (NCERT GRADE 9 CHAPTER 15 Example 5)

EXAMPLE 5 :

The record of weather station shows that out of the past 250 consecutive days , its weather forecasts were correct 175 times.

- (i) What is the probability that on a given day it was correct?
- (ii) What is the probability that it was not correct on a given day?

Solution :

Given ,

- 1) The total number of days for which the record is available is 250.
- 2) The number of days the forecast was correct is 175.
- 3) So, The number of days the forecast was wrong

$$= 250 - 175 = 75 \quad (1)$$

Let the random variable X be mapped to the following set of real numbers , $X \in \{0, 1\}$, where $X = 0$ denote that "the forecast was correct on a given day" and $X = 1$ denote that "the forecast was wrong on a given day".

So , we can write that ,

- (i) Probability that on a given day, the forecast was correct :

$$\Pr(X = 0) = \frac{175}{250} = 0.7 \quad (2)$$

- (ii) Probability that on a given day, the forecast was not correct :

$$\Pr(X = 1) = \frac{75}{250} = 0.3 \quad (3)$$

One can also Notice that:

$$\Pr(X = 0) + \Pr(X = 1) = 0.7 + 0.3 = 1 \quad (4)$$