Assignment6

G HARSHA VARDHAN REDDY (CS21BTECH11017)

May 16, 2022

Outline

Abstract

This document contains 6th problem from exercise 2 of CBSE Class 12 (Probability) .

Problem

Exercise 2 **Problem** 3 Let E and F be events with $P(E) = \frac{3}{5}$, $P(F) = \frac{3}{10}$ and $P(EF) = \frac{1}{5}$. Are E and F independent?

Theory

Independent events :

Two events are independent if the incidence of one event does not affect
the probability of the other event.(or)
Two events A, B(say) are said to be independent if $P(A) \times P(B) = P(AB)$

Solution

Let's check whether the above events are independent or not.

$$P(E) \times P(F) = \frac{3}{5} \times \frac{3}{10} \tag{1}$$

$$\implies P(E) \times P(F) = \frac{9}{50} \tag{2}$$

From (2) it's clear that

$$P(EF) \neq P(E) \times P(F) \tag{3}$$

Which says that the events E and F are not independent.