Assignment 3
CBSE Class 11 Exe 16.3 ,16

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Outline

Question

Events E and F are such that P(Not E or not F)=0.25, State whether E and F are mutually exclusive.

Solution

If A and B are mutually exclusive events then $\Pr(EF) = 0$
As given in the question ;

$$\Pr\left(\bar{E} + \bar{F}\right) = 0.25$$

As ,

$$\Pr\left(\bar{E} + \bar{F}\right) = \Pr\left(\overline{(\bar{E}\bar{F})}\right)$$

$$\implies \Pr\left(\overline{\bar{E}\bar{F}}\right) = 0.25$$
$$\implies 1 - \Pr(EF) = 0.25$$
$$\implies \Pr(EF) = 0.75$$

$$\because \Pr(EF) \neq 0$$

$\therefore$ E and F are not mutually exclusive events.