

Assignment 1

AI1110: Probability and Random Variables

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12.13.1.1: Given that E and F are events such that $P(E) = 0.6$, $P(F) = 0.3$ and $P(E \cap F) = 0.2$, find $P(E|F)$ and $P(F|E)$

Solution: Given,

$$P(E) = 0.6$$

$$P(F) = 0.3$$

$$P(E \cap F) = 0.2$$

$$\therefore P(E|F) = \frac{P(E \cap F)}{P(F)} = \frac{0.2}{0.3} = \frac{2}{3}$$

$$\therefore P(F|E) = \frac{P(E \cap F)}{P(E)} = \frac{0.2}{0.6} = \frac{1}{3}$$