

Assignment1

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Q 1.17 Determine $P(E/F)$, if two coins are tossed once, where

(i) E : tail appears on one coin, F : one coin shows head

(ii) E : no tail appears, F : no head appears

solution

$$(i) \quad P(F) = \binom{2}{1} \left(\frac{1}{2}\right)^2 + \binom{2}{2} \left(\frac{1}{2}\right)^2$$

$$P(F) = \frac{1}{2} + \frac{1}{4} = \frac{3}{4}$$

$$P(EF) = \binom{2}{1} \left(\frac{1}{2}\right)^2$$

$$P(EF) = \frac{1}{2}$$

$$P(E/F) = \frac{2}{3}$$

$$(ii) \quad P(F) = \binom{2}{2} \left(\frac{1}{2}\right)^2 = \frac{1}{4}$$

$$P(EF) = 0$$

$$P(E/F) = 0$$