

NCERT: Class XI

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16.4.7 ¹ A and B are two events such that $\Pr(A) = 0.54$, $\Pr(B) = 0.69$ and $\Pr(AB) = 0.35$. Find

(a) $\Pr(A + B)$

(b) $\Pr(A'B')$

(c) $\Pr(AB')$

(d) $\Pr(A'B)$

Solution:

(a) By addition theorem of probability, we know that

$$\Pr(A + B) = \Pr(A) + \Pr(B) - \Pr(AB) \quad (16.4.1.1)$$

$$= 0.54 + 0.69 - 0.35 \quad (16.4.1.2)$$

$$= 0.88 \quad (16.4.1.3)$$

(b)

$$\Pr(A'B') = 1 - \Pr(A + B) \quad (16.4.2.4)$$

$$= 1 - 0.88 \quad (16.4.2.5)$$

$$= 0.12 \quad (16.4.2.6)$$

(c)

$$\Pr(AB') = \Pr(A) - \Pr(AB) \quad (16.4.3.7)$$

$$= 0.54 - 0.35 \quad (16.4.3.8)$$

$$= 0.19 \quad (16.4.3.9)$$

¹Read question numbers as (CHAPTER NUMBER).(EXERCISE NUMBER).(QUESTION NUMBER)

(d) Similarly,

$$\Pr(A^cB) = \Pr(B) - \Pr(AB) \quad (16.4.4.10)$$

$$= 0.69 - 0.35 \quad (16.4.4.11)$$

$$= 0.34 \quad (16.4.4.12)$$