

Question: The probability that at least one of the events A and B occurs is 0.6. If A and B occur simultaneously with probability 0.2, then  $P(A') + P(B')$  is

(A) 0.4

(B) 0.8

(C) 1.2

(D) 1.6

**Solution:** : Given,

TABLE 0  
TABLE-1

Parameters	values	Description
$X_i$	0	A
	1	B
$p(X = 0, X = 1)$	0.6	Probability that atleast one of the events occur
$p(X = 0, X = 1)$	0.2	Probability that A and B occur simultaneously

$$\therefore P(X = 0 + X = 1) = P(0) + P(1) - p(X = 0, X = 1) \quad (1)$$

$$P(0) + P(1) = 0.8 \quad (2)$$

$$1 - P(0') + 1 - P(1') = 0.8 \quad (3)$$

$$\therefore P(0) + P(1') = 1.2 \quad (4)$$