ASSIGNMENT-13

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1 PROBABILITY 6.5

If A and B are any two events such that $\Pr(A) + \Pr(B) - \Pr(AB) = \Pr(A)$, then

(A) $\Pr(B/A) = 1$
(B) $\Pr(A/B) = 1$
(C) $\Pr(B/A) = 0$
(D) $\Pr(A/B) = 0$

2 SOLUTION

Given,

$$\Pr(A) + \Pr(B) - \Pr(AB) = \Pr(A) \qquad (2.0.1)$$

$$\implies \Pr(B) = \Pr(AB) \qquad (2.0.2)$$

Also note that,

$$\Pr(A|B)\Pr(B) = \Pr(AB) \qquad (2.0.3)$$

From (2.0.2),

$$\Pr(A|B)\Pr(B) = \Pr(B) \qquad (2.0.4)$$

If $\Pr(B) \neq 0$, then

$$\Pr(A|B) = 1 \qquad (2.0.5)$$