Assignment

Antalene (EE22BTECH11008)

Question 12.13.3.63
A and B are events such that $\Pr(A) = 0.4$ and $\Pr(B) = 0.3$ and $\Pr(A + B) = 0.5$ .Then $\Pr(B'A)$ is equal to
Solution: By axioms,

$$A = A(B + B') \tag{1}$$
$$A = AB + AB' \tag{2}$$
$$\implies AB' = A - AB \tag{3}$$
$$\implies \Pr(AB') = \Pr(A) - \Pr(AB) \tag{4}$$

we also know that,

$$\Pr(AB) = \Pr(A) + \Pr(B) - \Pr(A + B) \tag{5}$$
$$= 0.4 + 0.3 - 0.5 \tag{6}$$
$$= 0.2 \tag{7}$$

Hence,

$$\Pr(AB') = 0.4 - 0.2 \tag{8}$$
$$= 0.2 \tag{9}$$