## 12.13.3.62

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If A and B are two events and A  $\neq \phi$ , B  $\neq \phi$ , then

- 1)  $Pr(A|B) = Pr(A) \cdot Pr(B)$ 2)  $Pr(A|B) = \frac{Pr(A \cap B)}{Pr(B)}$ 3)  $Pr(A|B) \cdot Pr(B|A) = 1$ 4)  $Pr(A|B) = \frac{Pr(A)}{Pr(B)}$

## **Solution:**

Event	Random Variable	Description
A	0	Event A doesn't happen
	1	Event A happens
В	0	Event B doesn't happen
	1	Event B happens

1) 
$$Pr(A|B) = Pr(A = 1, B = 1)$$

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