

Evaluate the following Boolean formulas. Assume that the variables have the following values:

$$A = \text{false}, B = \text{true}, C = \text{true}, D = \text{false}, E = \text{true}, F = \text{false}$$

Let \mathbb{T} denote true and \mathbb{F} denote false. Then,

$$\begin{aligned}(A \wedge B) \vee C &\equiv (\mathbb{F} \wedge \mathbb{T}) \vee \mathbb{T} \\ &\equiv \mathbb{F} \vee \mathbb{T} \\ &\equiv \mathbb{T}.\end{aligned}$$

$$\begin{aligned}A \wedge (B \vee C) &\equiv \mathbb{F} \wedge (\mathbb{T} \vee \mathbb{T}) \\ &\equiv \mathbb{F} \wedge \mathbb{T} \\ &\equiv \mathbb{F}.\end{aligned}$$

$$\begin{aligned}D \rightarrow F &\equiv \mathbb{F} \rightarrow \mathbb{F} \\ &\equiv \mathbb{T}.\end{aligned}$$

For an arbitrary value G ,

G	$\neg G$	$\neg G \oplus G$	$(\neg G) \rightarrow G$	$G \rightarrow G$
\mathbb{T}	\mathbb{F}	\mathbb{T}	\mathbb{T}	\mathbb{T}
\mathbb{F}	\mathbb{T}	\mathbb{T}	\mathbb{F}	\mathbb{T}