

$$\begin{aligned}
\text{a)} \quad & \overline{\overline{B(A \vee C) \vee D A \vee C}} = \overline{\overline{B \vee \overline{AC} \vee \overline{AC} \vee \overline{D} \vee \overline{AC} \vee \overline{AC}}} = \\
& = B \vee \overline{\overline{AC} \overline{AC}} \vee \overline{\overline{D} \vee \overline{AC} \vee \overline{AC}} = B \vee (\overline{A} \vee C)(A \vee \overline{C}) \vee \overline{D} \vee \overline{AC} \vee \overline{AC} = \\
& = B \vee A \overline{A} \vee \overline{A} \overline{C} \vee AC \vee C \overline{C} \vee \overline{D} \vee \overline{AC} \vee \overline{AC} = B \vee \perp \vee \overline{A} \overline{C} \vee AC \vee \perp \vee \overline{D} \vee \overline{AC} \vee \overline{AC} = \\
& = B \vee \overline{A} \overline{C} \vee AC \vee \overline{D} \vee \overline{AC} \vee \overline{AC} = B \vee \overline{A}(C \vee \overline{C}) \vee A(C \vee \overline{C}) \vee \overline{D} = \\
& = B \vee (\overline{A} \wedge T) \vee (A \wedge T) \vee \overline{D} = B \vee \overline{A} \vee A \vee \overline{D} = B \vee T \vee \overline{D} = T
\end{aligned}$$

$$\begin{aligned}
\text{b)} \quad & \overline{\overline{B \vee (A \vee C) D \vee A \vee C}} = \overline{\overline{B \overline{AC} \vee \overline{AC} \overline{D} \overline{AC} \vee \overline{AC}}} = B \overline{AC} \overline{AC} \overline{D} (\overline{AC} \vee \overline{AC}) = \\
& = B (\overline{A} \vee C)(A \vee \overline{C}) \overline{D} (\overline{AC} \vee \overline{AC}) = B (A \overline{A} \vee \overline{A} \overline{C} \vee AC \vee C \overline{C}) \overline{D} (\overline{AC} \vee \overline{AC}) = \\
& = B (\perp \vee \overline{A} \overline{C} \vee AC \vee \perp) \overline{D} (\overline{AC} \vee \overline{AC}) = B (\overline{A} \overline{C} \vee AC) \overline{D} (\overline{AC} \vee \overline{AC}) = \\
& = B \overline{D} (A \overline{A} \overline{C} \vee \overline{A} C \overline{C} \vee A C \overline{C} \vee A \overline{A} C) = B \overline{D} (\perp \vee \perp \vee \perp \vee \perp) = B \overline{D} \wedge \perp = \perp
\end{aligned}$$