

$$\begin{aligned}
\text{a)} \quad & \overline{\overline{ABC \vee D} \vee \overline{ACD} \vee B} = \overline{\overline{ABC \vee D} \vee \overline{ACD} \vee B} = \\
& = (ABC \vee D)(\overline{ACD} \vee B) = (ABC \vee D)(\overline{A} \vee \overline{C} \vee \overline{D} \vee B) = \\
& = A\overline{A}BC \vee AB\overline{C}\overline{C} \vee ABC\overline{D} \vee ABBC \vee \overline{A}D \vee \overline{C}D \vee D\overline{D} \vee BD = \\
& = \perp \vee \perp \vee ABC\overline{D} \vee ABC \vee \overline{A}D \vee \overline{C}D \vee \perp \vee BD = ABC \vee \overline{A}D \vee \overline{C}D \vee BD = \\
& = ABC \vee \overline{A}D \vee \overline{C}D \vee BD(A \vee \overline{A})(C \vee \overline{C}) = \\
& = ABC \vee \overline{A}D \vee \overline{C}D \vee ABCD \vee AB\overline{C}D \vee \overline{A}BCD \vee \overline{A}BCD = \\
& = (ABC \vee ABCD) \vee (\overline{A}D \vee \overline{A}BCD \vee \overline{A}BCD) \vee (\overline{C}D \vee ABCD) \\
& = ABC \vee \overline{A}D \vee \overline{C}D = ABC \vee (\overline{A} \vee \overline{C})D
\end{aligned}$$

U ovom zadatku lako se dolazi do izraza $ABC \vee \overline{A}D \vee \overline{C}D \vee BD$, nakon čega se član BD može eliminirati kao u drugom primjeru na strani 22 u udžbeniku, ili ovako kako je demonstrirano ovdje, dvostrukim proširenjem tog člana i apsorpcijom dijelova dobijenih nakon proširenja u druge članove.

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

Ovdje se u posljednjem koraku vidi da član \overline{D} apsorбира u sebe sve ostale članove.

$$\begin{aligned}
\text{c)} \quad & \overline{\overline{ABC \vee D} \vee \overline{ACD} \vee B} = \overline{\overline{ABC \vee D} \vee \overline{ACD} \vee B} = \\
& = (\overline{ABC} \vee D)(\overline{ACD} \vee \overline{B}) = A\overline{A}\overline{B}C\overline{C}D \vee A\overline{B}\overline{B}C \vee \overline{A}C\overline{D}D \vee \overline{B}D = \\
& = \perp \vee A\overline{B}C \vee \overline{A}C\overline{D} \vee \overline{B}D = A\overline{B}C \vee \overline{A}C\overline{D} \vee \overline{B}D = A\overline{B}C \vee (\overline{A}C \vee \overline{B})D
\end{aligned}$$

$$\begin{aligned}
\text{d)} \quad & \overline{\overline{AB \vee CD} \vee \overline{AC} \vee \overline{BD}} = \overline{\overline{AB \vee CD} \vee \overline{AC} \vee \overline{BD}} = \\
& = (\overline{AB} \vee \overline{CD})(\overline{AC} \vee \overline{BD}) = A\overline{A}\overline{B}C \vee A\overline{B}\overline{B}D \vee \overline{A}C\overline{C}D \vee \overline{B}C\overline{D}D = \\
& = \perp \vee A\overline{B}D \vee \perp \vee \overline{B}C\overline{D} = A\overline{B}D \vee \overline{B}C\overline{D} = \overline{B}D(A \vee \overline{C})
\end{aligned}$$