

3)

$$\begin{aligned} \text{b) } \overline{A + (B \cdot C)} \cdot C &= \overline{A} \cdot \overline{(B \cdot C)} \cdot C = \overline{A} \cdot (\overline{B} + \overline{C}) \cdot C \\ &= \overline{A} \cdot C \cdot (\overline{B} + \overline{C}) = \overline{A} \cdot C \cdot \overline{B} + \overline{A} \cdot C \cdot \overline{C} = \overline{A} \cdot \overline{B} \cdot C + \overline{A} \cdot 0 \\ &= \overline{A} \cdot \overline{B} \cdot C // \end{aligned}$$

$$\begin{aligned} \text{c) } \overline{A \cdot (A \cdot \overline{B} + \overline{A} \cdot B)} &= \overline{A} \cdot \overline{(A \cdot \overline{B} + \overline{A} \cdot B)} \\ &= \overline{A} \cdot (\overline{A \cdot \overline{B}} \cdot \overline{\overline{A} \cdot B}) \\ &= \overline{A} \cdot (\overline{A} + \overline{\overline{B}}) \cdot (\overline{\overline{A}} + \overline{B}) = (\overline{A} \cdot (\overline{A} + B)) \cdot (A + \overline{B}) \\ &= (\overline{A} \cdot \overline{A} + \overline{A} \cdot B) \cdot (A + \overline{B}) = (0 + \overline{A} \cdot B) \cdot (A + \overline{B}) \\ &= (\overline{A} \cdot B) \cdot (A + \overline{B}) = \overline{A} \cdot B \cdot A + \overline{A} \cdot B \cdot \overline{B} = \overline{A} \cdot A \cdot B + \overline{A} \cdot B \cdot \overline{B} \\ &= \overline{A} \cdot B + \overline{A} \cdot 0 = \overline{A} \cdot B + 0 = \overline{A} \cdot B // \end{aligned}$$

$$\begin{aligned} \text{m) } \overline{(A + B)} \cdot (A + \overline{B}) \cdot \overline{(A + B)} &= \overline{(A + B)} \cdot (A + \overline{B}) \cdot \overline{(A + B)} \\ &= \overline{(A + B)} \cdot (A + \overline{B}) \cdot \overline{(A + B)} = \overline{A} \cdot \overline{B} \cdot A \cdot \overline{B} \cdot (A + \overline{B}) = \overline{A} \cdot \overline{A} \cdot \overline{B} \cdot \overline{B} \\ &= \overline{A} \cdot A \cdot \overline{B} \cdot \overline{B} \cdot (A + \overline{B}) = 0 \cdot \overline{B} \cdot (A + \overline{B}) = 0 // \end{aligned}$$