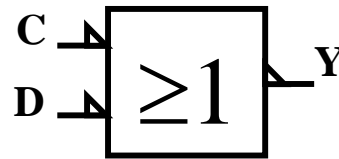
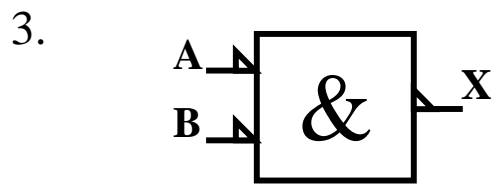


# OPLOSSINGEN

Vereenvoudig:

$$1. \mathbf{X} = \overline{\overline{A} + \overline{B}} = \mathbf{A \cdot B}$$

$$2. \mathbf{X} = \overline{\overline{\overline{A} \cdot \overline{B}}} = \mathbf{\overline{A + B}}$$



$$\mathbf{X} = \overline{\overline{A} \cdot \overline{B}} = \mathbf{A + B}$$

$$\mathbf{Y} = \overline{\overline{C} + \overline{D}} = \mathbf{C \cdot D}$$

$$4. \mathbf{X} = (A + B)\overline{AB} = (A + B)(\overline{A} + \overline{B})$$

$$= \cancel{A\overline{A}} + \mathbf{A\overline{B}} + \cancel{B\overline{B}} + \overline{A}B = \mathbf{A\overline{B} + \overline{A}B = A \oplus B}$$

$$5. \mathbf{Y} = \overline{\overline{CDE} + \overline{CDE} \cdot \overline{D}} = \mathbf{CDE \cdot \overline{\overline{CDE} \cdot \overline{D}}} = \overline{\overline{CDE} \cdot \underbrace{CED\overline{D}}_0} = 0$$

$$6. \mathbf{Z} = (A + B)(\overline{A} + C) + A\overline{B}C$$

$$= \cancel{A\overline{A}} + \mathbf{AC} + \overline{A}B + BC + \mathbf{A\overline{B}C}$$

$$= \mathbf{AC} + \overline{A}B + BC = \mathbf{AC} + \overline{A}B + (A + \overline{A})BC$$

$$= \mathbf{AC} + \underline{\overline{A}B} + \underline{ABC} + \underline{\overline{A}BC} = \mathbf{AC} + \overline{A}B$$

Bewijs dat:

$$1. (A + \bar{B})(\bar{A} + B) = \bar{A}\bar{B} + AB$$

$$\cancel{A\bar{A}} + AB + \bar{A}\bar{B} + \cancel{B\bar{B}} = \bar{A}\bar{B} + AB$$

$$2. \overline{AB + \bar{A}\bar{B}} = \bar{A}\bar{B} + A\bar{B}$$

$$\begin{aligned} \overline{AB} \cdot \overline{\bar{A}\bar{B}} &= (\bar{A} + \bar{B})(A + B) \\ &= \cancel{A\bar{A}} + \cancel{B\bar{B}} + \bar{A}B + A\bar{B} \\ &= \bar{A}B + A\bar{B} \end{aligned}$$

$$3. \overline{\bar{A}\bar{B} + A\bar{B}} = AB + \bar{A}\bar{B}$$

$$\begin{aligned} \overline{\bar{A}\bar{B}} \cdot \overline{A\bar{B}} &= (\bar{A} + B)(A + \bar{B}) \\ &= \cancel{A\bar{A}} + \cancel{B\bar{B}} + A\bar{B} + \bar{A}\bar{B} \\ &= A\bar{B} + \bar{A}\bar{B} \end{aligned}$$