

$$a) \quad \overline{x+y} = \bar{x} \cdot \bar{y} \longrightarrow \overline{x+y+z} = \bar{x} \cdot \bar{y} \cdot \bar{z}$$

$$\overline{xy} = \bar{x} + \bar{y} \longrightarrow \overline{xyz} = \bar{x} + \bar{y} + \bar{z}$$

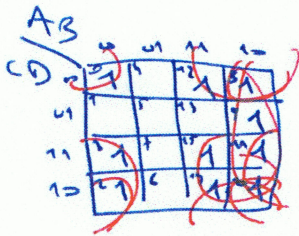
$$f = (A\bar{B}(C+D)) + ((C+\bar{D})(A+\bar{B})) = A\bar{B}C + A\bar{B}D + AC + A\bar{D} + \bar{B}C + \bar{B}\bar{D}$$

$$= \overline{\bar{A} + B + \bar{C}} + \overline{\bar{A} + B + \bar{D}} + \overline{A + \bar{C}} + \overline{A + D} + \overline{B + \bar{C}} + \overline{B + D}$$

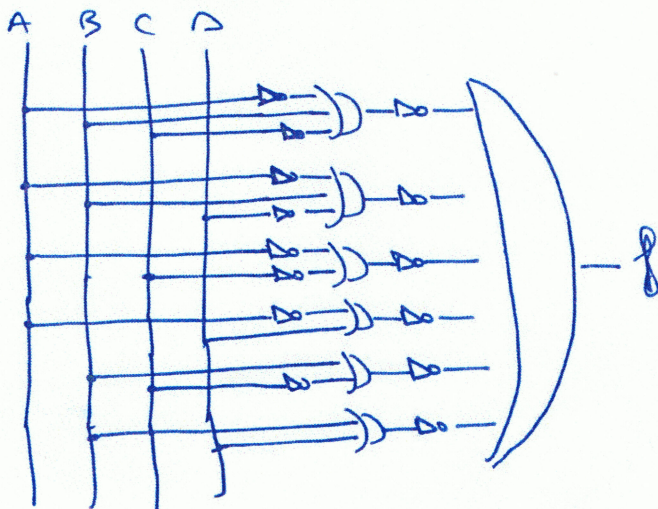
↑
Or
↑
inverter

$$b) \quad f = A\bar{B}C + A\bar{B}D + AC + A\bar{D} + \bar{B}C + \bar{B}\bar{D} = \sum (0, 2, 3, 8, 9, 10, 11, 12, 14)$$

$101x \downarrow 10, 11$
 $10x1 \downarrow 9, 11$
 $1x1x \downarrow 10, 11, 14, 15$
 $1xx0 \downarrow 8, 10, 12, 14$
 $x01x \downarrow 2, 3, 10, 11$
 $x0x0 \downarrow 0, 2, 8, 10$



$$f = A\bar{B} + AC + \bar{B}\bar{D} + A\bar{D} + C\bar{B}$$



inverting OR's & 2, 3 y
6 entree