



M = NOR 素子

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

$$= \bar{A}\bar{B} \cdot (A+B) + (A+B) \cdot \bar{A}\bar{B} = \bar{A}\bar{B}A + \bar{A}\bar{B}B + \bar{A}\bar{B}A + \bar{A}\bar{B}B$$

$$= 0 + 0 + 0 + 0 = \underline{0} \quad \text{よ、2 X}$$

M = OR 素子

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

$$= \bar{A}\bar{B} \cdot \bar{A}\bar{B} + \bar{A}+B \cdot \bar{A}+B = \bar{A}\bar{B} + \bar{A}+B = \bar{A}+B + \bar{A}+B = \underline{1} \quad \text{よ、2 X}$$

M = NAND 素子

$$C = \bar{A}\bar{B} \cdot \overline{\bar{A}\bar{B}} + \overline{\bar{A}\bar{B}} \cdot \bar{A}\bar{B} = \bar{A}\bar{B} \cdot AB + \bar{A}+B \cdot \bar{A}\bar{B}$$

$$= 0 + \bar{A}+B \cdot \bar{A}\bar{B} = (\bar{A}+B)(\bar{A}\bar{B})$$

$$= \bar{A}\bar{A} + \bar{A}\bar{B} + \bar{A}\bar{B} + \bar{B}\bar{B} = \underline{\bar{A}\bar{B} + \bar{A}\bar{B}} \quad \text{よ、2 X}$$

M = AND 素子

$$C = \bar{A}\bar{B} \cdot \bar{A}\bar{B} + \overline{\bar{A}\bar{B}} \cdot AB = \bar{A}\bar{B}(\bar{A}+\bar{B}) + (A+B)AB$$

$$= \bar{A}\bar{B}\bar{A} + \bar{A}\bar{B}\bar{B} + ABA + ABB$$

$$= \bar{A}\bar{B} + \bar{A}\bar{B} + AB + AB = \underline{\bar{A}\bar{B} + AB} \quad \text{よ、2 } \bigcirc$$

M = EXOR 素子

は必ず必要はなくなりました。

$$C = \underline{AB + \bar{A}\bar{B}} \quad \text{よ、2 } \bigcirc$$

答えは AND 素子 (総) by 1/11