1) $x1 = A \quad x2 = B \quad x3 = C$ | $\bar{A}\bar{B}C + \bar{A}BC + A\bar{B}\bar{C} + AB\bar{C} + ABC \Rightarrow$

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$\bar{A}\bar{B}C + \bar{A}BC + A\bar{B}\bar{C} + AB\bar{C} + \bar{A}BC + ABC \Rightarrow \bar{A}C + A\bar{C} + BC \Rightarrow$ $x1' \cdot x3 + x2 \cdot x3 + x1 \cdot x3'$ ✓

2) a] $M(x,y,z) = M_3 + M_5 + M_6 + M_7 \qquad N(x,y,z) = N_1 + N_2 + N_4 + N_7$

b] $M(x,y,z) = M_0 + M_1 + M_2 + M_4 \qquad N(x,y,z) = N_0 + N_3 + N_5 + N_6$

c] $M(x,y,z) = \bar{x}yz + x\bar{y}z + xy\bar{z} + xyz \qquad N(x,y,z) = \bar{x}\bar{y}z + \bar{x}y\bar{z} + x\bar{y}\bar{z} + xyz$

d] $M(x,y,z) = (x+y+z)(x+y+\bar{z})(x+\bar{y}+z)(\bar{x}+y+z)$

$N(x,y,z) = (x+y+z)(x+\bar{y}+\bar{z})(\bar{x}+y+\bar{z})(\bar{x}+\bar{y}+z)$

e] $M(x,y,z) = \bar{x}yz + x\bar{y}z + xy\bar{z} + xyz \Rightarrow$

dup dup

$\bar{x}yz + xyz + x\bar{y}z + xyz + xy\bar{z} + xyz \Rightarrow$

$yz + xz + xy$

$N(x,y,z) = \bar{x}\bar{y}z + \bar{x}y\bar{z} + x\bar{y}\bar{z} + xyz \Rightarrow$

$\bar{x}\bar{y}z + \bar{x}y\bar{z} + x\bar{y}\bar{z} + xyz$

3) ~~$(x+y+z)(x+y+\bar{z})(x+\bar{y}+z)(x+\bar{y}+\bar{z})(\bar{x}+y+z)(\bar{x}+y+\bar{z})(\bar{x}+\bar{y}+z)(\bar{x}+\bar{y}+\bar{z})$~~

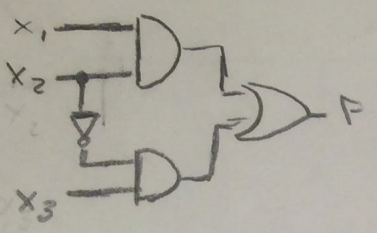
$(a+b+c+d)(a+b+\bar{c}+\bar{d})(a+\bar{b}+c+\bar{d})(a+\bar{b}+\bar{c}+d) \cdot$

$(\bar{a}+b+c+\bar{d})(\bar{a}+b+\bar{c}+d)(\bar{a}+\bar{b}+c+d)(\bar{a}+\bar{b}+\bar{c}+\bar{d})$

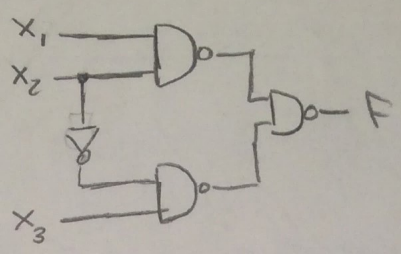
0, 3, 5, 6, 9, 10, 12, 15

1) $X_1X_2 + X_2X_3$

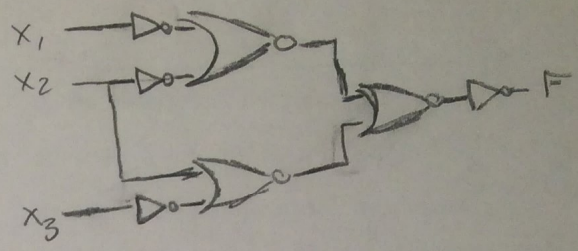
Original



a)



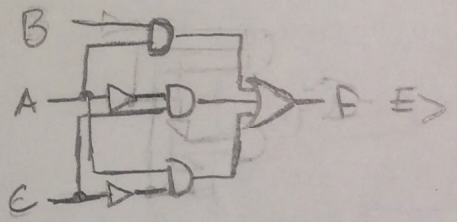
b)



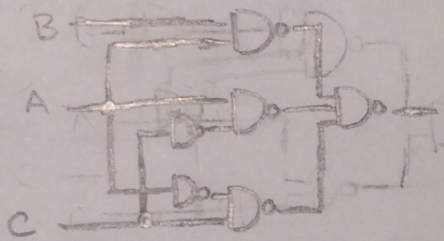
2) $x_1 = A \quad x_2 = B \quad x_3 = C$

$\bar{A}\bar{B}C + \bar{A}BC + A\bar{B}\bar{C} + AB\bar{C} + A\bar{B}C \Rightarrow$

$\bar{A}\bar{B}C + \bar{A}BC + A\bar{B}\bar{C} + AB\bar{C} + ABC + ABC \xrightarrow{\text{DeM}} \Rightarrow \bar{A}C + A\bar{C} + AB \Rightarrow$ Nand $\Rightarrow \overline{\bar{A}C} \cdot \overline{A\bar{C}} \cdot \overline{AB}$



$\Rightarrow$



3)