

Question 1

$$f(x, y) = x + y$$

On cherche g tels que $f(x, y) \times g(x, y) = 0 \quad \forall x, y$

Réponse:

x	y	$f(x, y)$	g
0	0	0	1 ou 0
0	1	1	0
1	0	1	0
1	1	1	0

il y a 2 fonctions booléennes
possibles pour g :

$$g = 0$$

$$\text{ou } g = \bar{x} \bar{y}$$

Question 2:

$$A = \overline{xy + \bar{x}\bar{y} + \bar{y}\bar{y}}$$

$$\stackrel{DM}{=} (\bar{x} + \bar{y}) \times (\overbrace{xy + \bar{x}\bar{y}}^{\text{dist } + / x}) (y + \bar{y})$$

$$= (\bar{x} + \bar{y}) (\bar{y} + xy) \quad \text{dist } + / x$$

$$= \bar{x}\bar{y} + \bar{x}xy + \bar{y}\bar{y} + \bar{y}xy \quad \text{dist } x / +$$

$$= \boxed{\bar{x}\bar{y} + \bar{y}\bar{y}}$$

$$= \boxed{\bar{x}y\bar{y} + \bar{x}\bar{y}\bar{y} + x\bar{y}\bar{y} + \bar{x}y\bar{y}}$$

Question 3 :

$$f(x, y, z, t) = \underbrace{x}_{\alpha} + \underbrace{\bar{y}z}_{\bar{\alpha}}$$

$$\begin{matrix} & \bar{y} & y & \bar{y} & \\ \left. \begin{matrix} z \\ \bar{z} \end{matrix} \right\} \left(\begin{array}{cccc} & \bar{t} & & \\ 1 & 1 & & 1 \\ 1 & 1 & & 1 \\ & & & \\ 1 & 1 & & \\ & & & \bar{t} \end{array} \right) & t & \\ & \bar{y} & y & \bar{y} & \end{matrix}$$

10 monômes
complets
dans la forme
canonique disjonctive
de f

Question 4

il y a $C_8^2 = \binom{8}{2}$ façons de choisir
2 triplets parmi 8 (combinaisons)

$$C_8^2 = \binom{8}{2} = \frac{8 \times 7}{2 \times 1} = 28$$

Question 5

$$\begin{matrix} & \alpha & \bar{\alpha} & \\ \left. \begin{matrix} z \\ \bar{z} \end{matrix} \right\} \left(\begin{array}{cccc} & \bar{t} & & \\ 1 & 1 & & 1 \\ 1 & 1 & & \\ & & & \\ & & & \bar{t} \end{array} \right) & t & \\ & \bar{y} & y & \bar{y} & \end{matrix}$$

$$f = \underbrace{\alpha y}_{\alpha} + \underbrace{\alpha z}_{\alpha} + \underbrace{\bar{y} z \bar{t}}_{\bar{\alpha}}$$