

EXERCICES sur les simplifications algébriques

EXERCICE 1 :

Simplifiez les fonctions suivantes :

$$F_1 = a.(a + b)$$

$$F_2 = (a + b).(\bar{a} + b)$$

$$F_3 = a.b + \bar{c} + c.(\bar{a} + \bar{b})$$

$$F_4 = (x.\bar{y} + z).(x + \bar{y}).z$$

$$F_5 = (x + y).z + \bar{x}.(\bar{y} + z) + \bar{y}$$

$$F_6 = (a + b + c).(\bar{a} + \bar{b} + c) + a.b + b.c$$

$$F_7 = a + a.b.c + \bar{a}.b.c + \bar{a}.b + a.d + a.\bar{d}$$

$$F_8 = a + \bar{a}.b + \bar{a}.\bar{b}.c + \bar{a}.\bar{b}.c.d + \bar{a}.\bar{b}.c.\bar{d}.e$$

$$F_9 = (a + b).(a + b.c) + \bar{a}.\bar{b} + \bar{a}.\bar{c}$$

EXERCICE 2 :

Simplifiez les fonctions suivantes :

$$F_1 = \bar{a}.b.c + a.c + (a + b).\bar{c}$$

$$F_2 = b.c + a.c + a.b + b$$

$$F_3 = (a.\bar{b} + c).(a + \bar{b}).c$$

$$F_4 = (a.c + b.\bar{c}).(\bar{a} + \bar{c}).b$$

$$F_5 = (\bar{a}.b + a.\bar{b}) + (a.b + \bar{a}.\bar{b})$$

$$F_6 = a.b.c + a.b.\bar{c} + \bar{a}.b.\bar{c} + \bar{a}.b.c$$

$$F_7 = a.\bar{b}.\bar{c} + a.b.\bar{c} + a.b.c + a.b.\bar{c}$$

$$F_8 = b.d + c.d + \bar{c}.d + \bar{a}.b.\bar{c}.\bar{d} + a.b.\bar{c}$$

$$F_9 = a.b.c + c.(a.\bar{b} + \bar{a}.b)$$

$$F_{10} = a.b.\bar{c} + b.(a + \bar{c}) + \overline{\bar{a} + b + \bar{a}.c}$$

EXERCICE 3 :

Complémenter puis simplifiez les fonctions suivantes :

$$T = a.b + b.c + a.c$$

$$F = \bar{c}.\bar{d} + \bar{a}.\bar{b} + c.\bar{d} + a.\bar{b}$$

$$G = \bar{a}.\bar{b} + a.b + a.\bar{b}$$

$$H = \bar{c}.d + \bar{a}.b + c.d + a.b$$