

FORMULE :

$$(a+b)(c+d) = ac + ad + bc + bd$$

EXERCICE 1

Développer les expressions en respectant les colonnes du tableau :

| $(a+b)$ | $(c+d)$ | = | ac | + | ad | + | bc | + | bd |
|-----------|-----------|---|------|---|------|---|------|---|------|
| $(x+y)$ | $(z+t)$ | = | | + | | + | | + | |
| $(3+2)$ | $(a+b)$ | = | | + | | + | | + | |
| $(x+3)$ | $(t+v)$ | = | | + | | + | | + | |
| $(a+c)$ | $(b+d)$ | = | | + | | + | | + | |
| $(c+d)$ | $(5+3)$ | = | | + | | + | | + | |
| (x^2+x) | (y^2+y) | = | | + | | + | | + | |
| $(a+x)$ | $(b+y)$ | = | | + | | + | | + | |
| $(c+a)$ | $(d+b)$ | = | | + | | + | | + | |

EXERCICE 2 - Développer :

| | | |
|---------------|---|-------------------------------|
| $(x+t)(y+z)$ | = | $xy + xz + ty + tz$ |
| $(a+x)(b+y)$ | = | + + + |
| $(3+x)(2+y)$ | = | + + + |
| $(x+6)(y+4)$ | = | + + + |
| $(a+2)(b+7)$ | = | + + + |
| $(b+a)(d+c)$ | = | + + + |
| $(c+d)(a+b)$ | = | + + + |
| $(1+x)(y+1)$ | = | + + + |
| $(x+2)(x+3)$ | = | + + + |
| $(2x+1)(x+5)$ | = | + + + |

EXERCICE 3 - Développer :

| | | |
|------------------|---|---------------------|
| $(x+3)(x-2)$ | = | $x^2 - 2x + 3x - 6$ |
| $(x-4)(x+1)$ | = | |
| $(x^2+1)(x+2)$ | = | |
| $(5-x)(-3-x)$ | = | |
| $(2a+4)(3a-5)$ | = | |
| $(x^2-3)(-2x+4)$ | = | |
| $(3x-7)(4x^2-1)$ | = | |
| $(1+x)(-x+1)$ | = | |
| $(3x^2-5)(x+2)$ | = | |
| $(-3+x)(6-2x^2)$ | = | |

EXERCICE 4

Développer puis réduire :

| | |
|-------------------------|---------------------|
| $A = (x+3)(x-2)$ | $B = (x-4)(x+6)$ |
| $A = x^2 - 2x + 3x - 6$ | $B =$ |
| $A = x^2 + x - 6$ | $B =$ |
| $C = (a-5)(2a-7)$ | $D = (4-x^2)(x+3)$ |
| $C =$ | $D =$ |
| $C =$ | $D =$ |
| $E = (3x-2)(5x+1)$ | $F = (4-2x)(-1-3x)$ |
| $E =$ | $F =$ |
| $E =$ | $F =$ |
| $G = (x+3)(x+3)$ | $H = (2-x)(2-x)$ |
| $G =$ | $H =$ |
| $G =$ | $H =$ |
| $I = (a+b)(a-b)$ | $J = (x+6)^2$ |
| $I =$ | $J =$ |
| $I =$ | $J =$ |

EXERCICE 5

Développer puis réduire :

| |
|--------------------------|
| $A = (4x-1)(6-3x)$ |
| $B = (x-2)(x+7) + x^2$ |
| $C = 2x^2 + (x-4)(3-x)$ |
| $D = x(x-1) - 3(x+1)$ |
| $E = (x+2)(-x-3) + 3x^2$ |

La Providence - Montpellier

CORRIGE - M. QUET

EXERCICE 1 : Développer :

| | | | | | | | | | |
|-------------|-------------|---|----------|---|--------|---|--------|---|------|
| $(a + b)$ | $(c + d)$ | = | ac | + | ad | + | bc | + | bd |
| $(x + Y)$ | $(z + t)$ | = | xz | + | xt | + | Yz | + | Yt |
| $(3 + 2)$ | $(a + b)$ | = | $3a$ | + | $3b$ | + | $2a$ | + | $2b$ |
| $(x + 3)$ | $(t + v)$ | = | xt | + | xv | + | $3t$ | + | $3v$ |
| $(a + c)$ | $(b + d)$ | = | ab | + | ad | + | cb | + | cd |
| $(c + d)$ | $(5 + 3)$ | = | $5c$ | + | $3c$ | + | $5d$ | + | $3d$ |
| $(x^2 + x)$ | $(y^2 + y)$ | = | x^2y^2 | + | x^2y | + | xy^2 | + | xy |
| $(a + x)$ | $(b + y)$ | = | ab | + | ay | + | xb | + | xy |
| $(c + a)$ | $(d + b)$ | = | cd | + | cb | + | ad | + | ab |

EXERCICE 2 - Développer :

| | | |
|-------------------|---|----------------------|
| $(x + t)(y + z)$ | = | $xy + xz + ty + tz$ |
| $(a + x)(b + y)$ | = | $ab + ay + xb + xy$ |
| $(3 + x)(2 + y)$ | = | $6 + 3y + 2x + xy$ |
| $(x + 6)(y + 4)$ | = | $xy + 4x + 6y + 24$ |
| $(a + 2)(b + 7)$ | = | $ab + 7a + 2b + 14$ |
| $(b + a)(d + c)$ | = | $bd + bc + ad + ac$ |
| $(c + d)(a + b)$ | = | $ca + cb + da + db$ |
| $(1 + x)(y + 1)$ | = | $y + 1 + xy + x$ |
| $(x + 2)(x + 3)$ | = | $x^2 + 3x + 2x + 6$ |
| $(2x + 1)(x + 5)$ | = | $2x^2 + 10x + x + 5$ |

EXERCICE 3 - Développer :

| | | |
|----------------------|---|--------------------------|
| $(x + 3)(x - 2)$ | = | $x^2 - 2x + 3x - 6$ |
| $(x - 4)(x + 1)$ | = | $x^2 + x - 4x - 4$ |
| $(x^2 + 1)(x + 2)$ | = | $x^3 + 2x^2 + x + 2$ |
| $(5 - x)(-3 - x)$ | = | $-15 - 5x + 3x + x^2$ |
| $(2a + 4)(3a - 5)$ | = | $6a^2 - 10a + 12a - 20$ |
| $(x^2 - 3)(-2x + 4)$ | = | $-2x^3 + 4x^2 + 6x - 12$ |
| $(3x - 7)(4x^2 - 1)$ | = | $12x^3 - 3x - 28x^2 + 7$ |
| $(1 + x)(-x + 1)$ | = | $-x + 1 - x^2 + x$ |
| $(3x^2 - 5)(x + 2)$ | = | $3x^3 + 6x^2 - 5x - 10$ |
| $(-3 + x)(6 - 2x^2)$ | = | $-18 + 6x^2 + 6x - 2x^3$ |

EXERCICE 4 : Développer puis réduire :

| | |
|----------------------------|-----------------------------|
| $A = (x + 3)(x - 2)$ | $B = (x - 4)(x + 6)$ |
| $A = x^2 - 2x + 3x - 6$ | $B = x^2 + 6x - 4x - 24$ |
| $A = x^2 + x - 6$ | $B = x^2 - 2x - 24$ |
| $C = (a - 5)(2a - 7)$ | $D = (4 - x^2)(x + 3)$ |
| $C = 2a^2 - 7a - 10a + 35$ | $D = 4x + 12 - x^3 - 3x^2$ |
| $C = 2a^2 - 17a + 35$ | $D = -x^3 - 3x^2 + 4x + 12$ |
| $E = (3x - 2)(5x + 1)$ | $F = (4 - 2x)(-1 - 3x)$ |
| $E = 15x^2 + 3x - 10x - 2$ | $F = -4 - 12x + 2x + 6x^2$ |
| $E = 15x^2 - 7x - 2$ | $F = 6x^2 - 10x - 4$ |
| $G = (x + 3)(x + 3)$ | $H = (2 - x)(2 - x)$ |
| $G = x^2 + 3x + 3x + 9$ | $H = 4 - 2x - 2x + x^2$ |
| $G = x^2 + 6x + 9$ | $H = 4 - 4x + x^2$ |
| $I = (a + b)(a - b)$ | $J = (x + 6)^2$ |
| $I = a^2 - ab + ba - b^2$ | $J = x^2 + 6x + 6x + 36$ |
| $I = a^2 - b^2$ | $J = x^2 + 12x + 36$ |

EXERCICE 5 : Développer puis réduire :

| |
|---------------------------------|
| $A = (4x - 1)(6 - 3x)$ |
| $A = 24x - 12x^2 - 6 + 3x$ |
| $A = -12x^2 + 27x - 6$ |
| $B = (x - 2)(x + 7) + x^2$ |
| $B = x^2 + 7x - 2x - 14 + x^2$ |
| $B = 2x^2 + 5x - 14$ |
| $C = 2x^2 + (x - 4)(3 - x)$ |
| $C = 2x^2 + 3x - x^2 - 12 + 4x$ |
| $C = x^2 + 7x - 12$ |
| $D = x(x - 1) - 3(x + 1)$ |
| $D = x^2 - x - 3x - 3$ |
| $D = x^2 - 4x - 3$ |
| $E = (x + 2)(-x - 3) + 3x^2$ |
| $E = -x^2 - 3x - 2x - 6 + 3x^2$ |
| $E = 2x^2 - 5x - 6$ |