La Simple Distributivité

Exercice 1 :

Développer et réduire les expressions suivantes :

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

$K = -2(x+5)$
$L = -3(x+7)$
$M = -3(3x+2)$
$N = -4(2x+7)$
$O = -4(7x-1)$
$P = -2(3x-5)$
$Q = -7(-2x+3)$
$R = -3(-5x+8)$
$S = -4(-3x-5)$
$T = -7(-2x-7)$

Solution :

$A = 4(x+3)$
$A = 4 \times x + 4 \times 3$
$A = 4x + 12$

$B = 2(x+7)$
$B = 2 \times x + 2 \times 7$
$B = 2x + 14$

$C = 3(2x+7)$
$C = 3 \times 2x + 3 \times 7$
$C = 6x + 21$

$D = 4(3x+1)$
$D = 4 \times 3x + 4 \times 1$
$D = 12x + 4$

$E = 7(3x-4)$
$E = 7(3x+(-4))$
$E = 7 \times 3x + 7 \times (-4)$
$E = 21x - 28$

$F = 5(2x-3)$
$F = 5(2x+(-3))$
$F = 5 \times 2x + 5 \times (-3)$
$F = 10x - 15$

$G = 4(-2x+3)$
$G = 4 \times (-2x) + 4 \times 3$
$G = -8x + 12$

$H = 3(-3x+7)$
$H = 3 \times (-3x) + 3 \times 7$
$H = -9x + 21$

$I = 6(-3x-7)$
$I = 6 \times (-3x) + 6 \times (-7)$
$I = -18x - 42$

$J = 5(-2x-3)$
$J = 5(-2x+(-3))$
$J = 5 \times (-2x) + 5 \times (-3)$
$J = -10x - 15$

$K = -2(x+5)$
$K = -2 \times x + (-2) \times 5$
$K = -2x - 10$

$L = -3(x+7)$
$L = -3 \times x + (-3) \times 7$
$L = -3x - 21$

$M = -3(3x+2)$
$M = -3 \times 3x + (-3) \times 2$
$M = -9x - 6$

$N = -4(2x+7)$
$N = -4 \times 2x + (-4) \times 7$
$N = -8x - 28$

$O = -4(7x-1)$
$O = -4(7x+(-1))$
$O = -4 \times 7x + (-4) \times (-1)$
$O = -28x + 4$

$P = -2(3x-5)$
$P = -2(3x+(-5))$
$P = -2 \times 3x + (-2) \times (-5)$
$P = -6x + 10$

$Q = -7(-2x+3)$
$Q = -7 \times (-2x) + (-7) \times 3$
$Q = 14x - 21$

$R = -3(-5x+8)$
$R = -3 \times (-5x) + (-3) \times 8$
$R = 15x - 24$

$S = -4(-3x - 5)$
$S = -4(-3x + (-5))$
$S = -4 \times (-3x) + (-4) \times (-5)$
$S = 12x + 20$

$T = -7(-2x - 7)$
$T = -7(-2x + (-7))$
$T = -7 \times (-2x) + (-7) \times (-7)$
$T = 14x + 49$

La double Distributivité

Exercice 2 :

Développer et réduire les expressions suivantes :

$A = (x + 4)(y + 7)$
$B = (2x + 5)(y + 4)$
$C = (3x + 7)(2x + 1)$
$D = (x - 3)(y + 7)$
$E = (x - 5)(x - 4)$
$F = (2x - 3)(3x + 5)$
$G = (3x - 7)(2x - 4)$
$H = (2x - 3)(-5x + 1)$
$I = (5x - 2)(-3x - 4)$
$J = (-4x + 2)(2x + 7)$

$K = (-3x + 1)(-5x + 4)$
$L = (-2x - 1)(-3x + 7)$
$M = (-5x - 2)(-4x - 3)$
$N = (-3x + 7)(-6x - 1)$
$O = (-9x + 7)(-6x + 7)$
$P = (-7x - 3)(2x - 7)$
$Q = (-5x + 1)(1 - 4x)$
$R = (2 + 3x)(4x - 1)$
$S = (2x + 3)(-7x - 4)$
$T = (3 - 5x)(4 - 7x)$

Solution :

$A = (x + 4)(y + 7)$
$A = x \times y + x \times 7 + 4 \times y + 4 \times 7$
$A = xy + 7x + 4y + 28$

$B = (2x + 5)(y + 4)$
$B = 2x \times y + 2x \times 4 + 5 \times y + 5 \times 4$
$B = 2xy + 8x + 5y + 20$

$C = (3x + 7)(2x + 1)$
$C = 3x \times 2x + 3x \times 1 + 7 \times 2x + 7 \times 1$
$C = 6x^2 + 3x + 14x + 7$
$C = 6x^2 + 17x + 7$

$D = (x - 3)(y + 7)$
$D = x \times y + x \times 7 - 3 \times y - 3 \times 7$
$D = xy + 7x - 3y - 21$

$E = (x - 5)(x - 4)$
$E = x \times x - x \times 4 - 5 \times x + 5 \times 4$
$E = x^2 - 4x - 5x + 20$
$E = x^2 - 9x + 20$

$F = (2x - 3)(3x + 5)$
$F = 2x \times 3x + 2x \times 5 - 3 \times 3x - 3 \times 5$
$F = 6x^2 + 10x - 9x - 15$
$F = 6x^2 + x - 15$

$G = (3x - 7)(2x - 4)$
$G = 3x \times 2x - 3x \times 4 - 7 \times 2x + 7 \times 4$
$G = 6x^2 - 12x - 14x + 28$
$G = 6x^2 - 26x + 28$

$H = (2x - 3)(-5x + 1)$
$H = 2x \times (-5x) + 2x \times 1 - 3 \times (-5x) - 3 \times 1$
$H = -10x^2 + 2x + 15x - 3$
$H = -10x^2 + 17x - 3$

$I = (5x - 2)(-3x - 4)$
$I = 5x \times (-3x) + 5x \times (-4) - 2 \times (-3x) - 2 \times (-4)$
$I = -15x^2 - 20x + 6x + 8$
$I = -15x^2 - 14x + 8$

$J = (-4x + 2)(2x + 7)$
$J = -4x \times 2x - 4x \times 7 + 2 \times 2x + 2 \times 7$
$J = -8x^2 - 28x + 4x + 14$
$J = -8x^2 - 24x + 14$

$K = (-3x + 1)(-5x + 4)$
$K = -3x \times (-5x) - 3x \times 4 + 1 \times (-5x) + 1 \times 4$
$K = 15x^2 - 12x - 5x + 4$
$K = 15x^2 - 17x + 4$

$L = (-2x - 1)(-3x + 7)$
$L = -2x \times (-3x) - 2x \times 7 - 1 \times (-3x) - 1 \times 7$
$L = 6x^2 - 14x + 3x - 7$
$L = 6x^2 - 11x - 7$

$M = (-5x - 2)(-4x - 3)$
$M = -5x \times (-4x) - 5x \times (-3) - 2 \times (-4x) - 2 \times (-3)$
$M = 20x^2 + 15x + 8x + 6$
$M = 20x^2 + 23x + 6$

$N = (-3x + 7)(-6x - 1)$
$N = -3x \times (-6x) - 3x \times (-1) + 7 \times (-6x) + 7 \times (-1)$
$N = 18x^2 + 3x - 42x - 7$
$N = 18x^2 - 39x - 7$

$O = (-9x + 7)(-6x + 7)$
$O = -9x \times (-6x) - 9x \times 7 + 7 \times (-6x) + 7 \times 7$
$O = 54x^2 - 63x - 42x + 49$
$O = 54x^2 - 105x + 49$

$P = (-7x - 3)(2x - 7)$
$P = -7x \times 2x - 7x \times (-7) - 3 \times 2x - 3 \times (-7)$
$P = -14x^2 + 49x - 6x + 21$
$P = -14x^2 + 43x + 21$

$Q = (-5x + 1)(1 - 4x)$
$Q = -5x \times 1 - 5x \times (-4x) + 1 \times 1 + 1 \times (-4x)$
$Q = -5x + 20x^2 + 1 - 4x$
$Q = 20x^2 - 9x + 1$

$R = (2 + 3x)(4x - 1)$
$R = 2 \times 4x + 2 \times (-1) + 3x \times 4x + 3x \times (-1)$
$R = 8x - 2 + 12x^2 - 3x$
$R = 12x^2 + 5x - 2$

$S = (2x + 3)(-7x - 4)$
$S = 2x \times (-7x) + 2x \times (-4) + 3 \times (-7x) + 3 \times (-4)$
$S = -14x^2 - 8x - 21x - 12$
$S = -14x^2 - 29x - 12$

$T = (3 - 5x)(4 - 7x)$
$T = 3 \times 4 + 3 \times (-7x) - 5x \times 4 - 5x \times (-7x)$
$T = 12 - 21x - 20x + 35x^2$
$T = 35x^2 - 41x + 12$