Correction des exercices de factorisation

I

$A = 5(x+1) + x(x+1) = \boxed{(x+1)(5+x)}$

$B = (x-1)(2x+3) + (x-1)(5x-2) = (x-1)[(2x+3)+(5x-2)] = (x-1)(2x+3+5x-2) = \boxed{(x-1)(7x+1)}$

$C = (2x-5)(4x-3) - (2x-5)(3x-1) = (2x-5)[(4x-3)-(3x-1)] = (2x-5)(4x-3-3x+1) = \boxed{(2x-5)(x-2)}$

$D = 2(3x-1)(x+3) - 3(x+3)(4x+1) = (x+3)[2(3x-1)-3(4x+1)] = (x+3)(6x-2-12x-3) = \boxed{(x+3)(-6x-5)}$

Remarque : Attention à la gestion des signes dans le crochet

$E = 7(x-7) - x(x-7) + 4(x-7) = (x-7)(7-x+4) = \boxed{(x-7)(11-x)}$

$F = (2x+5)(3x-7) - (2x+5)(5x-3) = (2x+5)[(3x-7)-(5x-3)] = (2x+5)(3x-7-5x+3) = \boxed{(2x+5)(-2x-4)}$

On peut améliorer : $(2x+5)(-2x-4) = (2x+5)[-2(x+2)] = \boxed{-2(2x+5)(x+2)}$

$G = (5x+7)(x-1) + (x-1)(3x-4) = (x-1)[(5x+7)+(3x-4)] = (x-1)(5x+7+3x-4) = \boxed{(x-1)(8x+3)}$

$H = (3x-2)(x-5) + (x-5)2 = (3x-2)(x-5) + (x-5)(x-5) = (x-5)[(3x-2)+(x-5)] = \boxed{(x-5)(4x-7)}$

$I = (x+7)(5x+2) - 3(5x+2)2 = (x+7)(5x+2) - 3(5x+2)(5x+2) = (5x+2)[(x+7)-3(5x+2)]$
$= (5x+2)(x+7-15x-6) = \boxed{(5x+2)(-14x+1)}$

$J = (3x-4)(2x+3) - (2x-3)(3x-4) = (3x-4)[(2x+3)-(2x-3)] = (3x-4)(2x+3-2x+3) = (3x-4)(6) = \boxed{6(3x-4)}$

II

$A = (5x-2) + 4(2x+1)(5x-2) = (5x-2)$Ö$1 + 4(2x+1)(5x-2) = (5x-2)[1+4(2x+1)] = (5x-2)(1+8x+4)$
$= \boxed{(5x-2)(5+8x)}$

$B = 7x(2x+3) + 2x + 3 = 7x(2x+3) + (2x+3)1 = \boxed{(2x+3)(7x+1)}$

$C = (3x+5)(x-1) + (x-1) = (3x+5)(x-1) + (x-1)1 = (x-1)[(3x+5)+1] = (x-1)(3x+5+1) = \boxed{(x-1)(3x+6)}$
(forme attendue)
$= (x-1)\times 3(x+2) = \boxed{3(x-1)(x+2)}$ **forme améliorée** .

$D = (7x-2)(3x+4) - (3x+4) = (7x-2)(3x+4) - (3x+4)1 = (3x+4)[(7x-2)-1] = (3x+4)(7x-2-1)$
$= \boxed{(3x+4)(7x-3)}$

$E = (5x-1)(2x+3) - 5x + 1 = (5x-1)(2x+3) - (5x-1) = (5x-1)(2x+3) - (5x-1)1 = (5x-1)[(2x+3)-1]$
$= (5x-1)(2x+3-1) = \boxed{(5x-1)(2x+2)}$ **(forme attendue)**
$= \boxed{2(5x-1)(x+1)}$ **(forme améliorée)**

$F = (7x-2)(x-9) + 14x - 4 = (7x-2)(x-9) + 2(7x-2) = (7x-2)[(x-9)+2] = (7x-2)(x-9+2) = \boxed{(7x-2)(x-7)}$

$G = (x+4)2 + (x-4)(x+4) + 2x + 8 = (x+4)(x+4) + (x-4)(x+4) + 2(x+4) = (x+4)[(x+4)+(x-4)+2]$
$= (x+4)(x+4+x-4+2) = \boxed{(x+4)(2x+2)}$ **(forme attendue)**
$= \boxed{2(x+4)(x+1)}$ **(forme améliorée)**

$H = (2x+6)(x-5) + 3x + 9 = 2(x+3)(x-5) + 3(x+3) = (x+3)[2(x-5)+3] = (x+3)(2x-10+3)$
$= \boxed{(x+3)(2x-7)}$