I) Réduire (si possible) :

$A = 7x - 9 + 8x + 6$

$B = 3x - 4 - 7x - 2 + 4x - 6$

$C = a + 9a \times ab + a \times 3 + 8a + a - a^2 \times b$

$D = 7x^2 + 8x - 3 - 4x^2 - 3x - 4$

$E = ab \times ab + b \times 7b + 5 \times b^2 + 4a \times ab + 5a^2 \times 2b^2$

$F = 7x + 3 - 3x^2 - 3x + 9$

$G = 4x^2 - 5x + 9 - 3x - 7x^2 - 2$

$H = -3 + 4x - 9x^2 + 5x - 2x^2 + 6$

$I = 13x - x^2 + 12 - 7x + 3x^2 - 4$

$J = 2x^2 - x + 4 - x^2 + 4x - 5$

$K = -3 + 2x + x^2 - 5x + 4x^2 - 1$

$L = -\left(\dfrac{1}{4} \times x\right)^2 \times (-2x) \times \dfrac{8}{3}$

$M = \dfrac{1}{4} \times a + 2a^2 + \dfrac{3}{4} \times a - \left(\dfrac{1}{2} \times a\right)^2$

$N = 11x + 7 - (5x - 3) + (x - 21)$

$O = -(x + 1) + (x - 1) - (x + 2)$

$P = (6x - 1) + 7 - (3 - 6x)$

$Q = 50 - (x + 20)$

$R = -(10 + x) + (x + 5)$

$S = (x^2 - 4x) - (5x^2 + 2x - 1)$

$T = -(3 - x + x^2) + (-2x + 3x^2 - 8)$

$U = x - 4 - (2 + x) + (x + 5)$

$V = -(x - 8) + (x - 6) - (7 - x)$

$W = (x^2 + 5x - 4) - (-2x^2 + 9x - 7)$

$X = (x - 6x) - (-3 - 2x) - 3$

$Y = 2a - (3b + 2a - 1) - [a - (2b + 4)]$

$Z = x - (x - (x - (x - 1)))$

II) Développer puis réduire :

$A = 2(5 - x)$

$B = 3(2x - 6)$

$C = -5(3 - 2x)$

$D = 5x\left(-\dfrac{7}{5} - 2x\right)$

$E = -4x(x - 9)$

$F = 2x(x + 1) + x(5x - 2)$

$G = -2(3x + 1) - 3(x + 3)$

$H = 3x^2 - (x^2 - 4x + 5) - 4x(x - 3)$

$I = (2x^2 - 7x + 4) - 4x(-3 + 2x)$

$J = 5x(-3x - 6) - (-15x^2 + 18x - 6)$

$K = (x + 3)(x + 4)$

$L = (x - 3)(x + 6)$

$M = \left(x - \dfrac{1}{2}\right)\left(x - \dfrac{5}{2}\right)$

$N = (3x + 4)(2x + 3)$

$O = (7x + 5)(5x + (-3))$

$P = (2x + 9)(7x - 1)$

$Q = (x - 1)(x + 1)$

$R = (2x + 3)(3x - 5)$

$S = (-3x + 5)(2x - 3)$

$T = (2x - 1)(2x + 1)$

$U = (-5x - 2)(3x + 2)$

$V = (x - 3)(2x + 6) - 4(x - 2)$

$W = (x + 2)(x + 4) + 5x^2 - 3x - 6$

$X = 3x - (7x - 5)(-x^2 - 8x + 9)$

$Y = (x + 1)^2$

$Z = (3x - 5)^2$

III) Factoriser :

$A = 5x + 10y$

$B = 8a - 10$

$C = 3a - a^2$

$D = 5ab^2 - 15a^2 b$

$E = 20xy + 5y$

$F = 49a^2 - 7a$

$G = 21a^2 - 7ab$

$H = 3x + 3x^2$

$I = 25xy + 10xy^2 - 15x^2 y$

$J = 51x^2 y - 34xy^2 + 17xy$

$K = 5x(x - 1) + 2(x - 1)$

$L = x + 3 + 2x(x + 3)$

$M = x(x + 5) + 5(5 + x)$

$N = (x + 5)(2x - 3) - x(2x - 3)$

$O = (x - 4)(10 - 3x) - (-5 - 2x)(x - 4)$

$P = (4 - 5x)(-3x + 1) - (4 - 5x) - 2(4 - 5x)$

$Q = (x + 2)(2x - 1) + (x + 2)(3x + 2)$

$R = 4 - 9x + (1 - x)(4 - 9x)$

$S = 4(x - 2) - (x - 2)(2x + 1)$

$T = (10x - 6)(x - 7) + (2x + 4)(x - 7)$

$U = (2x + 5)(x - 3) - (2x - 5)(2x + 5)$

$V = (3t + 7)(t - 1) - 2t(3t + 7)$

$W = (14x + 1)(3 + x) - 6 - 2x$

$X = (x + 5)^2 + (x + 5)(x + 1)$

$Y = (2x + 1)(3 - x) - (3 - x)^2 + 3 - x$

$Z = (2y + 4)(x + 1) + (y + 2)(2x - 1)$