Correction de l'interrogation n°1

Exercice 1. (2 points)

1. $(a+b)^2 = a^2 + 2ab + b^2$
2. $a^2 - b^2 = (a-b)(a+b)$

Exercice 2. (2 points)

1. $(x+y)^2 - (x-y)^2 = x^2 + 2xy + y^2 - (x^2 - 2xy + y^2) = 4xy$
2. Par conséquent $10002^2 - 9998^2 = (10000+2)^2 - (10000-2)^2 = 4 \times 10000 \times 2 = 80000$

Exercice 3. (6 points)

1. (a) $A = (x-1)^2(5-2x) = (x^2-2x+1)(5-2x) = 5x^2 - 2x^3 - 10x + 4x^2 + 5 - 2x = -2x^3 + 9x^2 - 12x + 5$
   (b) $B = (-2(x-1))^2 = (-2x+2)^2 = 4x^2 - 8x + 4$
   (c) $C = (\sqrt{3}x + 4)^2 = 3x - 8\sqrt{3}x + 16$
2. (a) $D = (4x-1)(3x-1) + (4x-1) = (4x-1)(3x-1+1) = (4x-1)(3x) = 3x(4x-1)$
   (b) $E = (1-6x)^2 - (1-6x)(2+5x) + 4(1-6x) = (1-6x)(1-6x-2-5x+4) = (1-6x)(-11x+3)$
   (c) $F = 9x^2 - 18x + 9 = (3x-3)^2$

Correction de l'interrogation n°1

Exercice 1. (2 points)

1. $a^2 - 2ab + b^2 = (a-b)^2$
2. $(a+b)(a-b) = a^2 - b^2$

Exercice 2. (2 points)

1. $(x+y)^2 - (x-y)^2 = x^2 + 2xy + y^2 - (x^2 - 2xy + y^2) = 4xy$
2. Par conséquent $10003^2 - 9997^2 = (10000+3)^2 - (10000-3)^2 = 4 \times 10000 \times 3 = 120000$

Exercice 3. (6 points)

1. (a) $A = (x-1)(5-2x)^2 = (x-1)(25-20x+4x^2) = 25x-20x^2+4x^3-25+20x-4x^2 = 4x^3-24x^2+45x-25$
   (b) $B = (-3(x+1))^2 = (-3x-3)^2 = 9x^2 - 18x + 9$
   (c) $C = (\sqrt{2}x + 4)^2 = 2x + 8\sqrt{x} + 16$
2. Factoriser les expressions suivantes :
   (a) $D = (2x-1)(3x-1) + 2(2x-1) = (2x-1)(3x-1+2) = (2x-1)(3x+1)$
   (b) $E = (1-6x)^2 - (1-6x)(2+5x) + (1-6x) = (1-6x)(1-6x-2-5x+1) = (1-6x)(-11x) = -11x(1-6x)$
   (c) $F = 4x^2 + 12x + 9 = (2x+3)^2$