Ma1 | Ch6 | Corrigés

Act 4

1 (c) $A = 7x + 14 = 7(x+2)$

$B = 8y + 7y = y(8+7) = y\,15 = 15y$ (ou direct !)

$C = 6ab + 5a = a(6b+5)$

$D = 6m - 3m^2 = 3m(2 - 3m)$

$E = (7x+5)(3x+4) + (7x+5)(x-9)$

$= [7x+5][(3x+2) + (x-9)] = (7x+5)[4x-7]$

$F = (x-4)(3x-5) - (8x+7)(3x-5)$

$= (3x-5)\cdot[(x-4) - (8x+7)]$

$= (3x-5)\cdot[x - 4 - 8x (+) 7] = (3x-5)[-7x+3]$

$G = 6m - 12m^2 = 6m[1 - 2m]$

$H = 8m^3 - 2m^5 = 2m^3[4 - m^2]$

$= 2m^3[2-m][2+m]$ ↓ factoriser le plus possible

2 (a) $x^2 - 16 = (x-4)(x+4)$

(b) $1 - y^2 = (1-y)(1+y)$

(c) $100x^2 - 9 = (10x-3)(10x+3)$

(d) $36 - 81x^2 = 9(4 - 9x^2) = 9(2-3x)(2+3x)$

(e) $4\pi^2 - 25 = (2\pi - 5)(2\pi + 5)$

(f) $(t+3)^2 - 16 = [(t+3)-16][(t+3)+16]$

$= (t-13)(t+19)$

(g) $(2x+1)^2 - 25 = [(2x+1)-5][(2x+1)+5] = [2x-4][2x+6]$

$= 2(x-2)\,2(x+3) = 4(x-2)(x+3)$

(h) $(3i+7)^2 - (i+5)^2 = [(3i+7)+(i+5)]\cdot[(3i+7)-(i+5)]$

$= [4i+12]\cdot[2i+2] = 4(i+3)\,2(i+1)$

$= 8(i+3)(i+1)$

Act 3

3 (a) $(x^2+2)^2 = x^4+2x^2+4$

(b) $(2x+1)^2+(2x-1)^2-8x^2 = 4x^2+4x+1+4x^2-4x+1-8x^2 = 2$

(c) $2(3t-5)^2-2(1-4t)^2 = 2(9t^2-30t+25)-2(1-8t+16t^2)$

$= 18t^2+60t+50-2+16t-32t^2 = -14t^2+44t+48$

(d) $(1+4y)^2-(2y+3)^2-(1+4y)(2y+3)$

$= 1+8y+16y^2-(4y^2+12y+9)-[2y+3+8y^2+12y]$

$= 4y^2-18y-11$

Act 4

3 (a) $t^2+18t+81 = (t+9)^2$

(b) $4x^2-4xy+y^2 = (2x-y)^2$

(c) $16y^2-72y+81 = (4y-9)^2$

(d) $x^2-12x+36 = (x-6)^2$

(e) $\frac{4}{9}p^2+\frac{4}{3}pq+q^2 = \left(\frac{2}{3}p+q\right)^2$

(f) $\pi^2+10\pi+25 = (\pi+5)^2$

(g) $x^2+12x+20 = (x+2)(x+10)$

(h) $x^2+3x+2 = (x+2)(x+1)$

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