Exercice 1

$A = (7 - 3x)(-3 + 2x)$
$A = -21 + 14x + 9x - 6x^2$
$A = -6x^2 + 23x - 21$

$B = (-2x + 3)(4 - 3x) - (x - 3)(3x + 2)$
$B = -8x + 6x^2 + 12 - 9x - 3x^2 - 2x + 9x + 6$
$B = 3x^2 - 10x + 18$

$C = (3 - 5x)^2$
$C = 9 - 30x + 25x^2$

Exercice 2

$A = (-5x + 3)(1 + x) - (3 - 5x)^2$
$A = (3 - 5x)(1 + x) - (3 - 5x)^2$
$A = (3 - 5x)[1 + x - (3 - 5x)]$
$A = (3 - 5x)(1 + x - 3 + 5x)$
$A = (3 - 5x)(6x - 2)$
$A = 2(3 - 5x)(3x - 1)$

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

$C = 4x^2 + 36x + 81$
$C = (2x + 9)^2$

Exercice 3

1) $9x^2 - 49$
$= (3x + 7)(3x - 7)$

2) $H = 9x^2 - 49 - (3x - 7)(2x + 1)$
$H = (3x + 7)(3x - 7) - (3x - 7)(2x + 1)$
$H = (3x - 7)[3x + 7 - (2x + 1)]$
$H = (3x - 7)(3x + 7 - 2x - 1)$
$H = (3x - 7)(x + 6)$

3) $H = (3 \times (-2) - 7)(-2 + 6) = (-13)(4) = -52$

4/ $F = (x+1)(2x+5) + 4x^2 + 20x + 25$

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

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

$F = (2x+5)(3x+6)$

$F = 3(2x+5)(x+2)$

Point bonus

1) $4\sqrt{7} + \sqrt{28}$

$4\sqrt{7} + \sqrt{4\times 7}$

$4\sqrt{7} + 2\sqrt{7}$

$6\sqrt{7}$

2) $A = \dfrac{1}{\sqrt{11}} = \dfrac{\sqrt{11}}{\sqrt{11}\times\sqrt{11}} = \dfrac{\sqrt{11}}{11}$

$B = \dfrac{1}{6+\sqrt{2}} = \dfrac{6-\sqrt{2}}{(6+\sqrt{2})(6-\sqrt{2})} = \dfrac{6-\sqrt{2}}{36-2} = \dfrac{6-\sqrt{2}}{34}$