x	$-\infty$		-4		3		$+\infty$
Signe de $5x+20$		$-$	0	$+$		$+$	
Signe de $-4x+12$		$+$		$+$	0	$-$	
Signe de $(5x+20)(-4x+12)$		$-$	0	$+$	0	$-$	

32 page 75

$f(x) = -x^2+2x+7$

$= -(x^2-2x) + 7$

$= -[(x-1)^2-1] + 7$

$= -(x-1)^2+1+7$

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

Réponse 4

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

$x^2-2x = (x-1)^2-1$

33 page 75

$f(x) = 2(x-3)^2-8$

$= 2(x^2-6x+9) - 8$

$= 2x^2-12x+18-8$

$f(x) = 2x^2-12x+10$

36 page 75

$f(x) = 4x^2+8x-5$

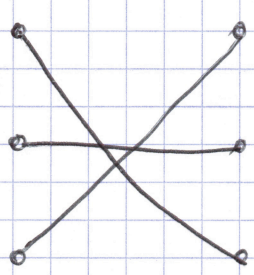
$= 4\left(x^2+2x-\frac{5}{4}\right)$

$= 4\left((x+1)^2-1^2-\frac{5}{4}\right)$

$= 4\left((x+1)^2-\frac{9}{4}\right)$

$= 4(x+1)^2-9$

38 page 75



Détail au verso

$$-2x^2-4x+3 = -2(x^2+2x)+3$$
$$= -2\left((x+1)^2-1\right)+3$$
$$= -2(x+1)^2+2+3$$
$$= -2(x+1)^2+5$$

$$-2x^2-8x-5 = -2(x^2+4x)-5$$
$$= -2\left[(x+2)^2-4\right]-5$$
$$= -2(x+2)^2+8-5$$
$$= -2(x+2)^2+3$$

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

37 page 75

(a) $f(x) = 2x^2-2x+3$
$$= 2(x^2-x)+3$$
$$= 2\left[\left(x-\frac{1}{2}\right)^2-\frac{1}{4}\right]+3$$
$$= 2\left(x-\frac{1}{2}\right)^2-\frac{1}{2}+3$$
$$f(x) = 2\left(x-\frac{1}{2}\right)^2+\frac{5}{2}$$

(b) $g(x) = 3x^2+6x+12$
$$= 3(x^2+2x)+12$$
$$= 3\left[(x+1)^2-1\right]+12$$
$$= 3(x+1)^2-3+12$$
$$g(x) = 3(x+1)^2+9$$

$$h(t) = -5t^2 - 2t + 20$$
$$= -5(t^2 + 4t) + 20$$
$$= -5\left[(t+2)^2 - 4\right] + 20$$
$$= -5(t+2)^2 + 20 + 20$$
$$h(t) = -5(t+2)^2 + 40$$

Développement du cours.

$$g(x) = a\left[\left(x + \frac{b}{2a}\right)^2 - \frac{b^2 - 4ac}{4a^2}\right]$$
$$= a\left[x^2 + 2x\frac{b}{2a}x + \left(\frac{b}{2a}\right)^2 - \frac{b^2 - 4ac}{4a^2}\right]$$
$$= a\left(x^2 + \frac{b}{a}x + \frac{b^2}{4a^2} - \frac{b^2 - 4ac}{4a^2}\right)$$
$$= a\left(x^2 + \frac{b}{a}x + \frac{b^2 - b^2 + 4ac}{4a^2}\right)$$
$$= a\left(x^2 + \frac{b}{a}x + \frac{4ac}{4a^2}\right)$$
$$= ax^2 + bx + \frac{4ac}{4a}$$

$$\underline{g(x) = ax^2 + bx + c}$$