

# Devoir Surveillé

## exercice 1:

$$A = 4x^2 - 9x + 2$$

$$\hookrightarrow a = 4, b = -9, c = 2$$

$$B = (2x - 1)(3x + 7)$$

$$= 6x^2 + 11x - 7$$

$$\hookrightarrow a = 6, b = 11, c = -7$$

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

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

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

$$- [4x^3 - 8x^2 + 4x + x^2 - 2x + 1]$$

$$= \cancel{4x^3} - \cancel{2x} + 8x^2 - 4 - \cancel{4x^3} \\ + 8x^2 - 4x - x^2 + \cancel{2x} - 1$$

$$= 15x^2 - 4x - 5$$

$$C' = (2x^2 - 8x + 1)(2x + 2) - (2x^2 + 4x - 6)(2x - 5)$$

$$= \cancel{4x^3} + 4x^2 - 16x^2 - 16x + 2x + 2 - \cancel{4x^3} + 10x^2 - 8x^2 + 20x + 12x - 30$$

$$= -10x^2 + 18x - 28$$

$$L > a = -10, b = 18, c = -28$$

$$D = -2x + 4x^2 - 6x \\ + 5x - 4x^2 - 3$$

$$= -3x - 3$$



## exercice 2 :

- $6y + y^2 + 9 = 0$

$$\begin{aligned} & (y^2) + 6y + (9) = 0 \\ & \quad \swarrow \quad \searrow \quad \swarrow \quad \searrow \\ & (y + 3)^2 = 0 \end{aligned}$$

$$\Rightarrow y + 3 = 0$$

$$y = -3$$

$$\bullet (s-t)(2t-3) + 1 \times (s-t) = 0$$

$$(s-t)(2t-3 + \textcircled{1}) = 0$$

$$(s-t)(2t-2) = 0$$

$$s-t = 0$$

$$2t-2 = 0$$

$$t = s$$

$$t = 1$$

$$\bullet (7-m)^2 - 64m^2 = 0$$

$$(7-m-8m)(7-m+8m) = 0$$

$$(7-9m)(7+7m) = 0$$

$$7-9m = 0$$

$$7+7m = 0$$

$$m = \frac{7}{9}$$

$$m = -1$$





### exercice 3 :

$$\bullet (n-6)(n+2) < 0$$

$$\hookrightarrow -2 < n < 6$$

$$\bullet 64 - (s-h)^2 \leq 0$$

$a^2 - b^2 = (a-b)(a+b)$

$$(8 - (s-h))(8 + (s-h)) \leq 0$$

$$(3+h)(13-h) \leq 0$$

$$\hookrightarrow \mathcal{S} = ]-\infty; -3]$$

$$\cup [13; +\infty[$$

## exercice 4 :

$$x^2 - 12x + 9$$

$$(x - 6)^2 - 36 + 9$$

$$(x - 6)^2 - 27$$

$$(x - 6 - \sqrt{27})(x - 6 + \sqrt{27})$$

donc  $S = \{ 6 + \sqrt{27} ; 6 - \sqrt{27} \}$ .