

## Correction de l'interno 1

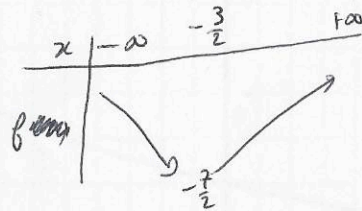
exo 1

$$1. \quad \alpha = \frac{-6}{2 \times 2} = -\frac{3}{2} \quad \beta = f\left(-\frac{3}{2}\right) = 2\left(-\frac{3}{2}\right)^2 + 6 \times \left(-\frac{3}{2}\right) + 1$$
$$= 2 \times \frac{9}{4} - 9 + 1$$
$$= \frac{9}{2} - 8$$
$$= -\frac{7}{2}$$

Donc  $f(x) = 2\left(x + \frac{3}{2}\right)^2 - \frac{7}{2}$

2.  $S\left(-\frac{3}{2}; -\frac{7}{2}\right)$

3. Comme  $a = 2 > 0$ , on a



exo 2

$$1. \quad \Delta = (-1)^2 - 4 \times 2 \times (-1)$$
$$\Delta = 9 > 0$$

$$x_1 = \frac{1 - \sqrt{9}}{2 \times 2}$$

$$x_1 = \frac{1 - 3}{4} \quad x_2 = \frac{1 + 3}{4}$$

$$\boxed{x_1 = -\frac{1}{2}}$$

$$\boxed{x_2 = 1}$$

$$2. \quad f(x) = 2\left(x + \frac{1}{2}\right)(x - 1)$$

exo 3

$$1. \quad \Delta = (-1)^2 - 4 \times 1 \times (-1)$$
$$\Delta = 1 + 4$$

$$\Delta = 49 > 0$$

$$x_1 = \frac{1 - \sqrt{49}}{2}$$

$$x_1 = \frac{1 - 7}{2} \quad x_2 = \frac{1 + 7}{2}$$

$$\boxed{x_1 = -3}$$

$$\boxed{x_2 = 4}$$

$$2. \quad x(x+2) = 3$$

$$x^2 + 2x - 3 = 0$$

$$\Delta = 2^2 - 4 \times 1 \times (-3)$$

$$\Delta = 4 + 12$$

$$\Delta = 16 > 0$$

$$x_1 = \frac{-2 - \sqrt{16}}{2}$$

$$x_1 = \frac{-2 - 4}{2}$$

$$\boxed{x_1 = -3}$$

$$x_2 = \frac{-2 + 4}{2}$$

$$\boxed{x_2 = 1}$$

exo 4

1. Les abscisses des points d'intersection sont  $-1$  et  $5$ .  
Cela correspond aux racines de  $f$ .

Donc  $f(x) = a(x+1)(x-5)$

2.  $A(0; 5) \in \text{Vef}$  donc  $f(0) = 5$ .

$$a(0+1)(0-5) = 5$$

$$-5a = 5$$

$$\boxed{a = -1}$$

Donc  $f(x) = -(x+1)(x-5)$

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

3.  $\alpha = \frac{-4}{-2} = 2$   $\beta = f(2) = -2^2 + 4 \times 2 + 5$

$$= -4 + 8 + 5$$
$$= 9$$

Donc  $S(2; 9)$  est le sommet de la parabole.