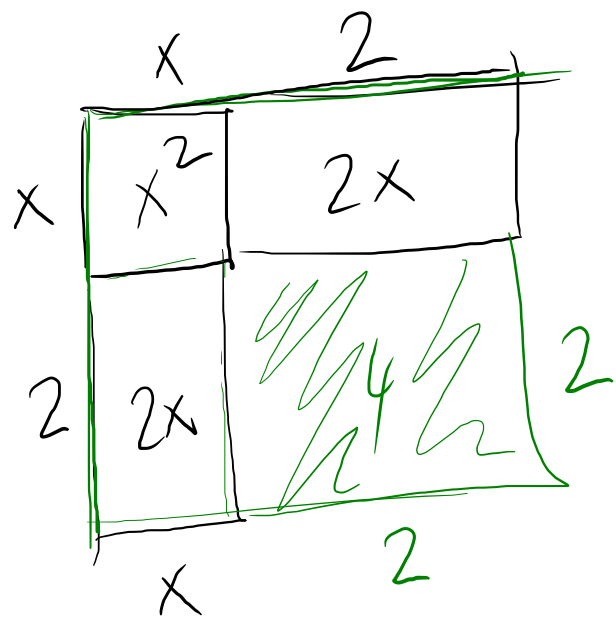


# Equation du 2<sup>de</sup> degré

$$x^2 + 4x = 77$$

compléter le carré →

$$x^2 + 4x + 4 = 77 + 4$$



$$(x+2)^2 = 81$$

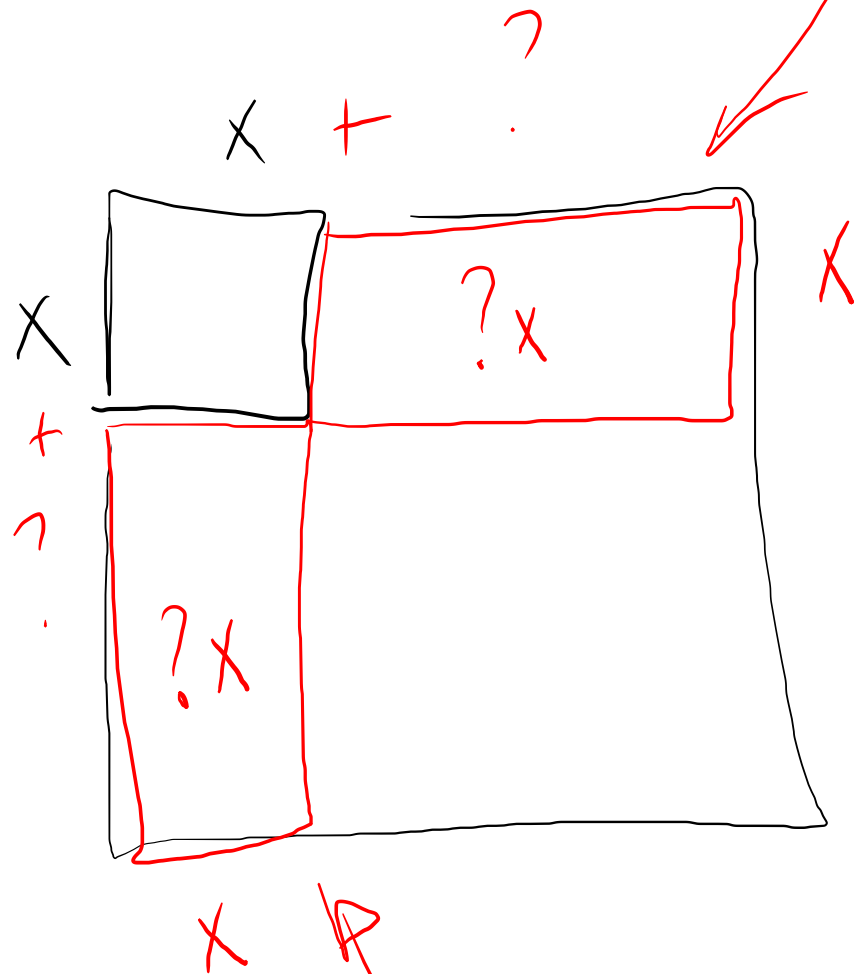
$$x+2 = 9$$

$$x = 7$$

$$x+2 = -9$$

$$x = -11$$

$$x^2 + 4x$$



$$?x + ?x = 4x$$

$$? = 2$$

$$x^2 + 2px - q = 0$$

$$\Delta = 4p^2 - 4 \cdot 1 \cdot (-q) = 4p^2 + 4q$$

$$-p \pm \sqrt{p^2 + q} = x = \frac{-2p \pm \sqrt{4p^2 + 4q}}{2} = \frac{-2p \pm \sqrt{4(p^2 + q)}}{2} = \frac{-2p \pm 2\sqrt{p^2 + q}}{2} x$$

$$\boxed{x^2 + 2px = q}$$

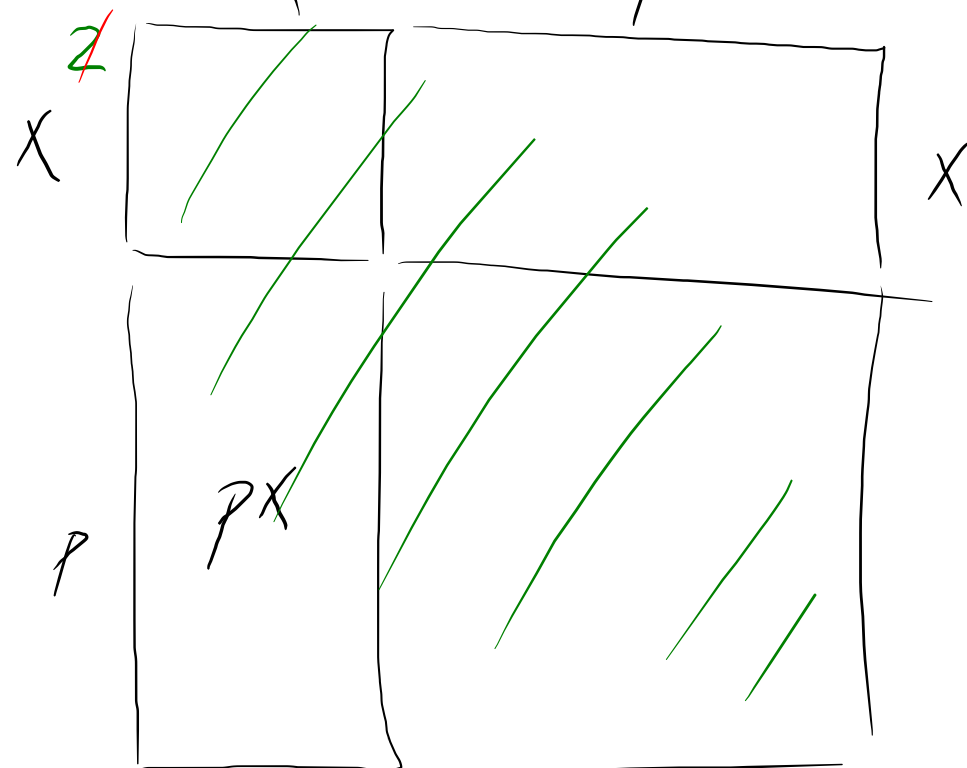
$$2x^2 + bx + c = 0$$

$$x^2 + 2px + p^2 = q + p^2$$

$$(x+p)^2 = q + p^2$$

$$x+p = \pm \sqrt{q+p^2}$$

$$x = -p \pm \sqrt{q+p^2} = -p \pm \sqrt{p^2+q}$$



$$(\sqrt{q+p^2})^2 = q+p^2$$

$$(-\sqrt{q+p^2})^2 = q+p^2$$

$$3x^2 - 10x + 37 = 0$$

$$x^2 - \frac{10}{3}x + \frac{37}{3} = 0$$

$$x^2 - \frac{10}{3}x = -\frac{37}{3}$$

The terms  $-\frac{10}{3}x$  and  $-\frac{37}{3}$  are circled in red. A red  $2p$  is written above the first circle, and a red  $q$  is written above the second circle.

$$x^2 + 2px = q$$

$$p = -\frac{5}{3}$$

$$q = -\frac{37}{3}$$

$$2x^3 - x^2 + 5x - 1$$

$$x-3$$

$2x^3 - x^2 + 5x - 1$	$x-3$
$2x^3 - 6x^2$	$2x^2 + \dots$
<hr/>	
$R$	

$$\begin{aligned} R &= 2 \cdot (3)^3 - 3^2 + 5 \cdot 3 - 1 \\ &= 54 - 9 + 15 - 1 \\ &= 59 \end{aligned}$$

$P(x)$	$x-2$
<hr/>	
$R$	

$$P(x) = Q(x) \cdot \overset{\text{deg } 1}{(x-2)} + R$$
$$P(2) = Q(2) \cdot (2-2) + R \quad \uparrow \text{ nombre}$$
$$P(2) = R$$