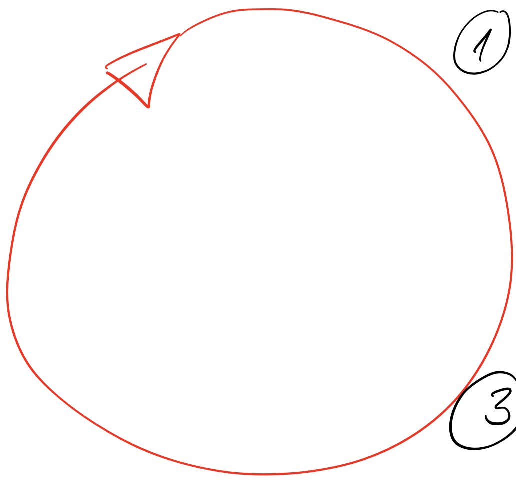
FACTORISER

Processus cyclique



① MISE EN ÉVIDENCE

② FORMULES

③ TRINÔME

Formule de Viète

Somme-produit

Factoriser:

$A^2+2AB+B^2$

$A=x \quad B=1$

$$\boxed{x^2+2x+1 = (x+1)(x+1)}$$

$$\Delta = 2^2-4\cdot1\cdot1 = 4-4=0 \quad =0$$

$$x_1 = \frac{-2+\sqrt{0}}{2} = -1 \qquad x_2 = \frac{-2-\sqrt{0}}{2} = -1$$

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

$(x+1)(x+1)$

x^2+2x+1

$1\cdot1=1 \;/\; 1+1=2$

$$ax^2+bx+c=0 \iff x = \frac{-b \pm \sqrt{b^2-4ac}}{2a}$$

$$\boxed{\begin{aligned} \Delta &= b^2-4ac \\ x_1 &= \frac{-b+\sqrt{\Delta}}{2a} \\ x_2 &= \frac{-b-\sqrt{\Delta}}{2a} \end{aligned}}$$

solutions de l'équation

$$ax^2+bx+c = a(x-x_1)(x-x_2)$$

Factoriser x^2+4x+3

$1+3=4$ $\qquad 1\cdot 3=3$

ax^2+bx+c

x varie

$a, b, c \in \mathbb{R}$ fixés

$$(x+1)(x+3) = x\cdot x + x\cdot 3 + 1\cdot x + 1\cdot 3$$
$$= x^2 + (3+1)x + 1\cdot 3$$

$$\boxed{\begin{aligned} (x+m)(x+n) &= x^2+nx+mx+mn \\ &= x^2+(n+m)\cdot x+m\cdot n \end{aligned}}$$

$x^2 + \overset{m+n}{5}x + \overset{m\cdot n}{6} = (x+2)(x+3)$

$2x^2+5x+6$

$x^2+2x-3 = (x+3)(x-1)$

$\cancel{2\left(x-\frac{-5+\sqrt{25-48}}{4}\right)(x-x_2)}$

$x^2+7x+12 = (x+3)(x+4)$

$\notin \mathbb{C}$

$(4z+1)(z+1)$

Pas factorisable

$\overset{1+4}{4z^2+5z+1} = \overset{1}{4z\cdot z} \boxed{\overset{2}{+4z\cdot 1} \overset{3}{+ 1\cdot z}} \overset{4}{+1\cdot 1}$

$\boxed{(4z+1)(z+1)} = 4(z+1/4)(z+1)$

$\cancel{(2z\quad)(2z\quad)}$

$z = \frac{-5\pm\sqrt{25-16}}{8}$

$\overset{a}{4}\cdot(z\overset{-x_1}{+1})(z\overset{-x_2}{+\frac{1}{4}})$

$= \frac{-5\pm 3}{8}$

$-1 = x_1$

$-\frac{2}{8} = -\frac{1}{4} = x_2$