

Exemple 1.19.Résoudre l'équation $2x^3 + 5x^2 = 23x - 10$.

$$2x^3 + 5x^2 - 23x + 10 = 0$$

candidats: $\pm 1, \pm 2, \pm 5, \pm 10$

$$P(1) = 2 + 5 - 23 + 10 \neq 0$$

$$P(-1) = -2 + 5 + 23 + 10 \neq 0$$

$$P(2) = 16 + 20 - 46 + 10 = 0 \checkmark$$

Homer:	2	5	-23	10
	2	4	18	-10
	2	9	-5	10

$$\Rightarrow (x-2)(2x^2 + 9x - 5) = 0$$

$$\Leftrightarrow \underline{x=2} \quad \text{ou} \quad 2x^2 + 9x - 5 = 0$$

$$\Delta = 81 - 4 \cdot 2 \cdot (-5) = 121$$

$$x_{1,2} = \frac{-9 \pm 11}{4} = \begin{cases} \underline{\frac{1}{2}} \\ \underline{-5} \end{cases}$$

$$\Rightarrow \underline{\underline{S = \left\{ -5; \frac{1}{2}; 2 \right\}}}$$

m.à.s.

$$1) \dots = 0$$

2) factoriser

3) chaque facteur = 0