

EX 1.31

$$1) \quad x^4 + 2x^3 - 4x^2 - 5x - 6 = 0$$

candidates : $\pm 1, \pm 2, \pm 3, \pm 6$

$$P(2) = 16 + 16 - 16 - 10 - 6 = 0 \checkmark$$

	1	2	-4	-5	-6
2		2	8	8	6
	1	4	4	3	0

$$\Leftrightarrow (x-2) \underbrace{(x^3 + 4x^2 + 4x + 3)}_{Q(x)} = 0$$

$$P(-3) = \dots = 0$$

$$Q(-3) = -27 + 36 - 12 + 3 = 0 \checkmark$$

	1	4	4	3
-3		-3	-3	-3
	1	1	1	0

$$\Leftrightarrow (x-2)(x+3) \underbrace{(x^2 + x + 1)}_{\Delta = 1 - 4 = -3 < 0} = 0$$

$$\begin{array}{c} \downarrow \quad \downarrow \\ 2 \quad -3 \end{array}$$

$\Delta = 1 - 4 = -3 < 0$
pas de sol.

$$\Rightarrow \underline{S = \{-3; 2\}}$$