

Ex 2.3.3

$$P \cdot (x-5) = x^3 - 3x^2 - 4x - 30$$

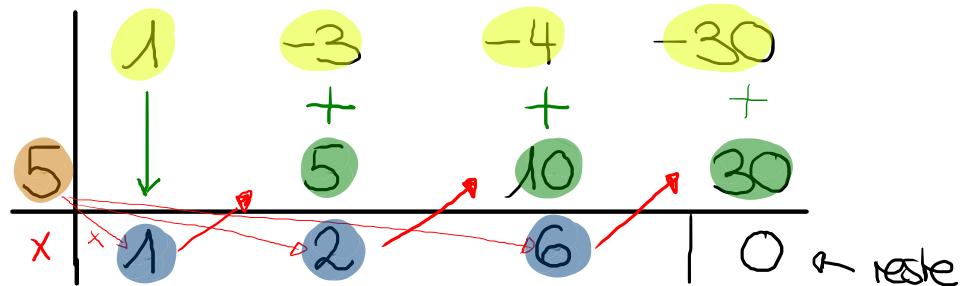
$$P = (\text{ " " " }) \div (x-5)$$

$$\begin{array}{r} x^3 - 3x^2 - 4x - 30 \\ -x^3 + 5x^2 \\ \hline 2x^2 - 4x - 30 \\ -2x^2 + 10x \\ \hline 6x - 30 \\ -6x + 30 \\ \hline 0 \end{array} \quad \begin{array}{c} x-5 \\ \hline x^2 + 2x + 6 \end{array}$$

$$\Rightarrow x^3 - 3x^2 - 4x - 30 = (x-5)(x^2 + 2x + 6)$$

le polynôme $x^3 - 3x^2 - 4x - 30$ est
divisible par $x-5$ car le reste = 0

Algorithme de division pour une division par $x-a$

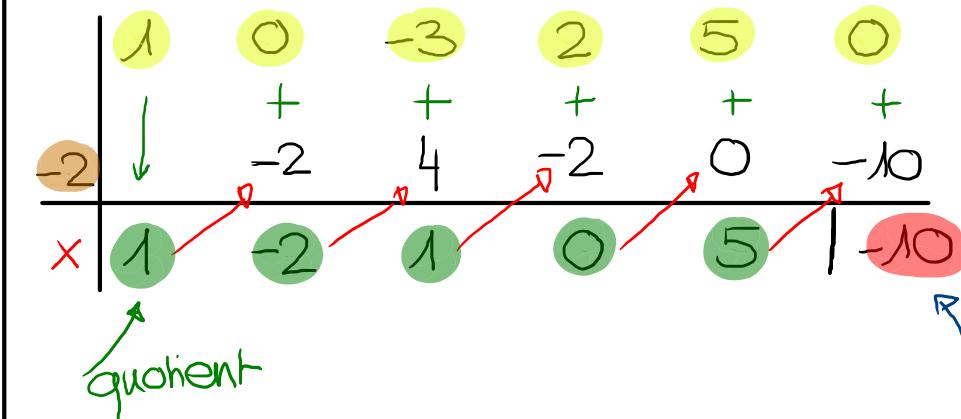


Ce tableau s'appelle le schéma de Horner

Ex 2.3.1

h)
$$\begin{array}{r} x^5 - 3x^3 + 2x^2 + 5x \\ -x^5 - 2x^4 \\ \hline -2x^4 - 3x^3 + 2x^2 + 5x \\ + 2x^4 + 4x^3 \\ \hline x^3 + 2x^2 + 5x \\ -x^3 - 2x^2 \\ \hline 5x \\ -5x - 10 \\ \hline -10 \end{array}$$

$$\begin{array}{c|l} x+2 & x^4 - 2x^3 + x^2 + 5 \\ \hline & x^4 - 2x^3 + x^2 + 5 \end{array}$$



R reste de la division

$$\Rightarrow x^5 - 3x^3 + 2x^2 + 5 = (x+2)(x^4 - 2x^3 + x^2 + 5) - 10$$

ex 2.3.19

2.3.8