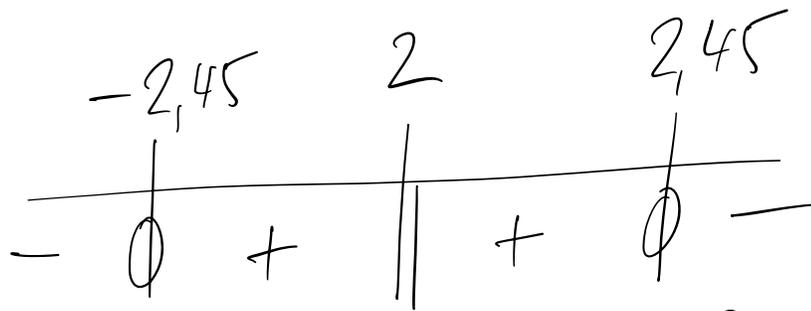


$$f(x) = \frac{x^2 - 6}{x - 2} \approx \frac{(x - 2,45)(x + 2,45)}{x - 2}$$

$$\textcircled{1} \mathcal{D}_f = \mathbb{R} - \{2\} \quad \text{car } x - 2 = 0 \Leftrightarrow x = 2$$

$$x^2 - 6 = 0 \Leftrightarrow x^2 = 6 \Leftrightarrow x = \pm \sqrt{6} \approx \pm 2,45$$



$$f(0) = 3 > 0$$

$$\textcircled{2} \lim_{x \rightarrow 2} f(x) = \lim_{x \rightarrow 2} \frac{x^2 - 6}{x - 2} = \left\langle \frac{4 - 6}{2 - 2} \right\rangle = \left\langle \frac{-2}{0} \right\rangle = \infty$$

\Rightarrow A.V. en $x = 2$

$\deg(x^2 - 6) - \deg(x - 2) = 2 - 1 = 1$ implique
qu'il y a une A.O. et pas d'A.H.

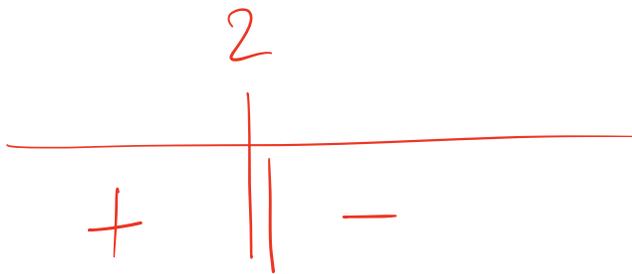
$$\begin{array}{r|l} x^2-6 & x-2 \\ x^2-2x & x+2 \\ \hline 2x-6 & \\ 2x-4 & \\ \hline -2 & \end{array}$$

$$x^2-6 = (x+2)(x-2) - 2$$

$$\frac{x^2-6}{x-2} = (x+2) - \frac{2}{x-2}$$

$f(x)$

Position (signe de f):



dessus

dessous

$$\begin{aligned} f(0) &= -\frac{2}{0-2} \\ &= 1 > 0 \end{aligned}$$

$$\textcircled{3} \quad f'(x) = \left(\frac{x^2-6}{x-2} \right)' = \frac{(x^2-6)'(x-2) - (x^2-6)(x-2)'}{(x-2)^2}$$

$$= \frac{2x(x-2) - (x^2-6) \cdot 1}{(x-2)^2}$$

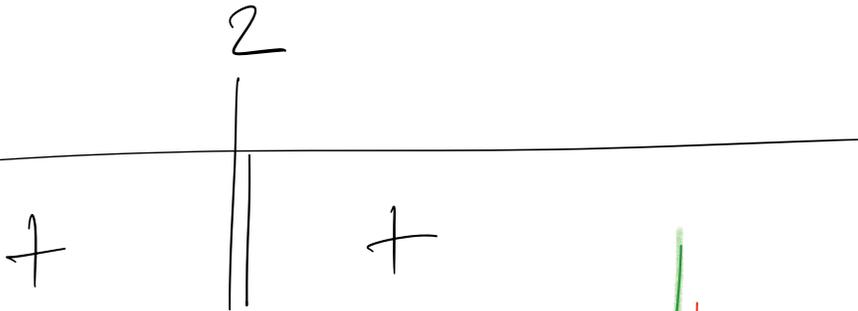
$$= \frac{2x^2 - 4x - x^2 + 6}{(x-2)^2} = \frac{x^2 - 4x + 6}{(x-2)^2}$$

$$f'(x) = 0 \Leftrightarrow x \neq 2 \text{ et } x^2 - 4x + 6 = 0$$

$$\Leftrightarrow x = \frac{4 \pm \sqrt{16 - 24}}{2} = \frac{4 \pm \sqrt{-8}}{2}$$

f' n'a pas de zéro réel.

$$f'(0) = \frac{6}{4} > 0$$



(4)

