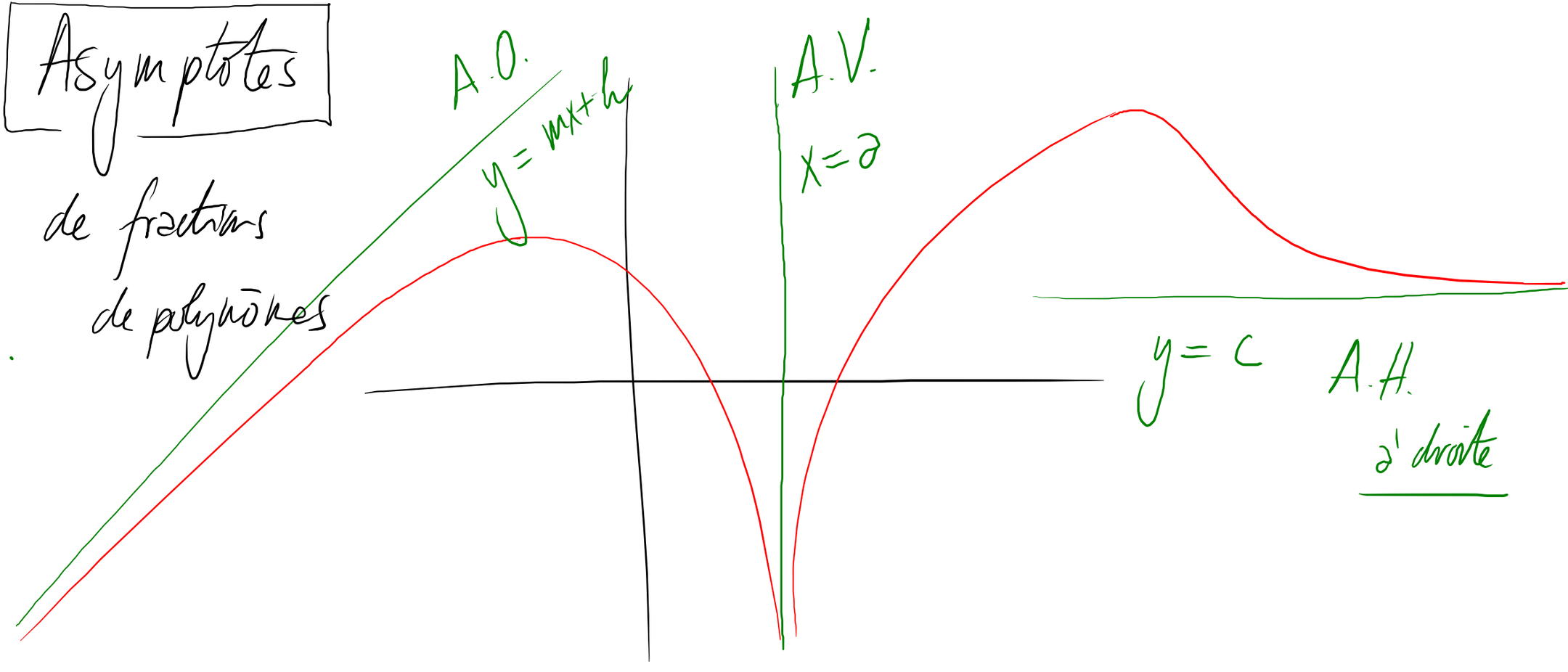
Asymptotes

de fractions de polynômes



$$\begin{array}{r|l} x^3+1 & x^2 \\ \hline x^3 & \boxed{x} \\ \hline 1 & \end{array}$$

$y = x$

$$\boxed{x^3+1 = x \cdot x^2 + 1}$$

Egalité fond.

$$\frac{x^3+1}{x^2} = x + \frac{1}{x^2} \xrightarrow{x \to \infty} x$$

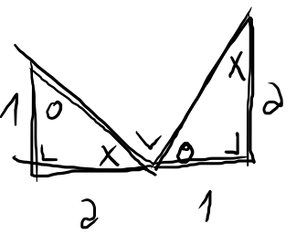
$$\frac{x^3 - x^2 + 2x + 1}{x^2 + 2x - 3}$$

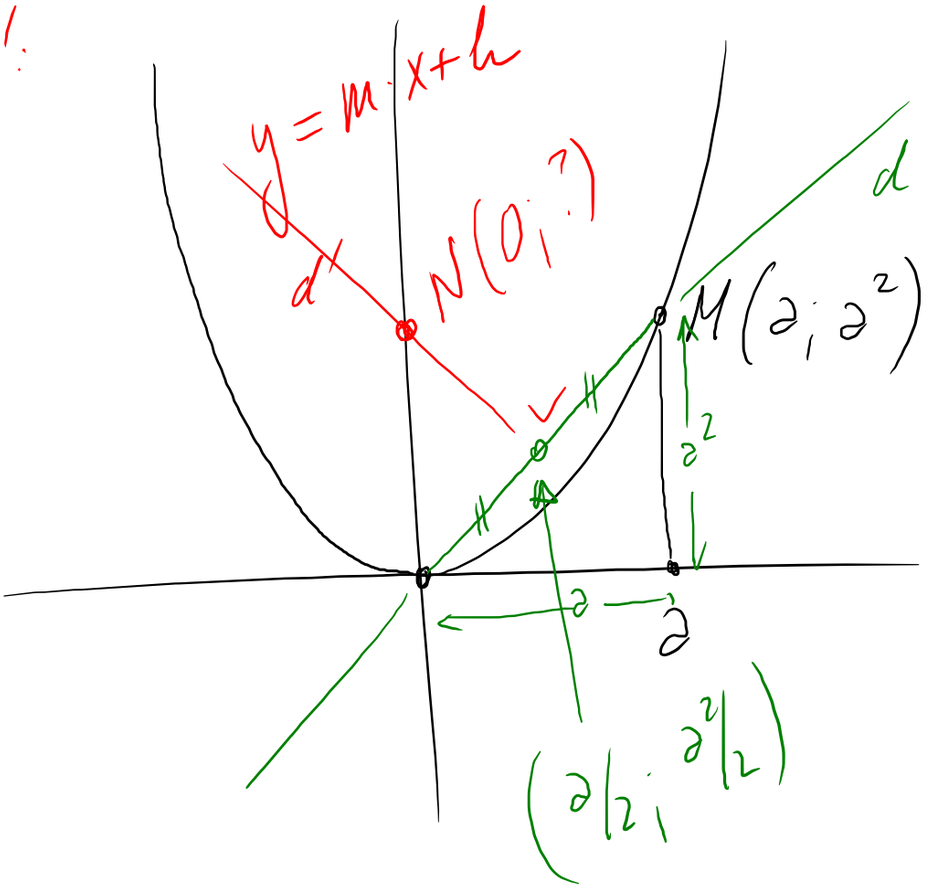
A.O. ✓

$$\begin{array}{r|l}
x^3 - x^2 + 2x + 1 & x^2 + 2x - 3 \\
\hline
x^3 + 2x^2 - 3x & x - 3 \\
\hline
-3x^2 + 5x + 1 & \\
-3x^2 - 6x + 9 & \\
\hline
-11x - 8 &
\end{array}$$

pente de d' :

$$m = -\frac{1}{a}$$





pente de d : $\frac{a^2}{a} = a$

$$\frac{a^2}{2} = m \cdot \frac{a}{2} + h$$

$$h = \frac{a^2}{2} - m \cdot \frac{a}{2}$$

$$= \frac{a^2}{2} + \frac{1}{a} \cdot \frac{a}{2} = \frac{a^2}{2} + \frac{1}{2}$$

$$d' : y = -\frac{1}{a}x + \frac{a^2}{2} + \frac{1}{2}$$

$$N(0; ?) \Rightarrow y = \frac{a^2}{2} + \frac{1}{2}$$

$$N\left(0; \frac{a^2}{2} + \frac{1}{2}\right) \xrightarrow{a \to 0} N\left(0; \frac{1}{2}\right)$$

$$2x^2+3x+1=0$$

$$2x^2+3x+1 \xrightarrow{a\to 0} 3x+1$$

$$3x+1=0 \Leftrightarrow x=-\frac{1}{3}$$

$$2x^2+3x+1=0$$

$$\Leftrightarrow x=\frac{-3\pm\sqrt{9-4a}}{2a}$$

$$\frac{-3+\sqrt{9-4a}}{2a} \xrightarrow{a\to 0} -\frac{1}{3}$$

$$\frac{-3-\sqrt{9-4a}}{2a} \xrightarrow{a\to 0} \infty$$