$$y=\frac{x^2+6x+4}{2x} \qquad D=\left]-\infty;0\right[\cup\left]0;+\infty\right[$$

$$D=\{\forall x\in\mathbb{R}: x\neq 0\}$$

$\Delta=20$

$$x_{1,2}\left\langle\begin{array}{l}\dfrac{-6-\sqrt{20}}{2}=\dfrac{-6-2\sqrt5}{2}=\dfrac{2(-3-\sqrt5)}{2}=-3-\sqrt5=\sim-5{,}24\\[2ex]\dfrac{-6+\sqrt{20}}{2}=-3+\sqrt5\ \sim-0{,}76\end{array}\right.$$

		$-3-\sqrt5$		$-3+\sqrt5$		0	
(x^2+6x+4)	$+$	0	$-$	0	$+$		$+$
$2x$	$-$		$-$		$-$	$\times$	$+$
	$-$	0	$+$	0	$-$	$\nexists$	$+$

INT ASSI

$(\sim-5{,}24;0)\ (\sim-0{,}76;0)$

AS. VERTICALE

$x=0$

AS. OBLIQUO $\quad m=\lim\limits_{x\to\infty}\dfrac{f(x)}{x}=\lim\limits_{x\to\infty}\dfrac{\frac{x^2}{x^2}+\frac{6x}{x^2}\to0+\frac{4}{x^2}\to0}{\frac{2x^2}{x^2}}$

$$=\frac{1}{2}$$

$$q=\lim_{x\to\infty}\left(\frac{x^2+6x+4}{2x}-\frac{1}{2}x\right)$$

$$=\lim_{x\to\infty}\frac{\cancel{x^2}+6x+4-\cancel{x^2}}{2x}=\lim_{x\to\infty}\frac{6x+4}{2x}=\lim_{x\to\infty}\frac{\frac{6x}{x}+\frac{4}{x}}{\frac{2x}{x}}=\frac{6}{2}=3$$

$$y=\frac{1}{2}x+3$$

$$y=\frac{x^2+6x+4}{2x}$$

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

$$y'=\frac{4x^2+\cancel{12}x-2x^2-\cancel{12}x-8}{4x^2}$$

$$y'=\frac{2x^2-8}{4x^2}$$

$$y'=\frac{\cancel{2}(x^2-4)}{{}^2\cancel{4}x^2}$$

$$y'=\frac{x^2-4}{2x^2}$$

		-2		0		$+2$	
x^2-4	$+$	0	$-$		$-$	0	$+$
$2x^2$	$+$		$+$	$\times$	$+$		$+$
y'	$+$	0	$-$	$\nexists$	$-$	0	$+$
y	$\nearrow$	M	$\searrow$	A.V.	$\searrow$	m	$\nearrow$

$$y_M = f(-2) = \frac{(-2)^2+6(-2)+4}{2(-2)} = \frac{4-12+4}{-4} = \frac{-4}{-4} = +1$$

$$y_m = f(2) = \frac{(2)^2+6(2)+4}{2(2)} = \frac{4+12+4}{4} = \frac{20}{4} = 5$$

Max$(-2; 1)$

min$(2, 5)$