

$$\textcircled{1} f(x) = \frac{x}{2} + \frac{2}{x} \quad \text{sur }]0; +\infty[$$

$$f'(x) = \frac{1}{2} - \frac{2}{x^2} = \frac{x^2 - 4}{2x^2} = \frac{(x-2)(x+2)}{2x^2}$$

$\forall x \in]0, 2]$; $f'(x) \leq 0$, donc la fonction est décroissante sur $]0, 2]$

$\forall x \in [2, +\infty[$, $f'(x) \geq 0$, donc la fonction est croissante sur $[2, +\infty[$.

x	0		2		$+\infty$
$f'(x)$		-	0	+	
$f(x)$	$+\infty$		2		$+\infty$

Diagram illustrating the behavior of the function $f(x)$ and its derivative $f'(x)$ on the interval $]0; +\infty[$. The x-axis is marked at 0, 2, and $+\infty$. The derivative $f'(x)$ is negative on $]0, 2[$ and positive on $]2, +\infty[$. The function $f(x)$ has a vertical asymptote at $x=0$ where it goes to $+\infty$, and a local minimum at $x=2$ where it is 2. It then increases towards $+\infty$ as x approaches $+\infty$.