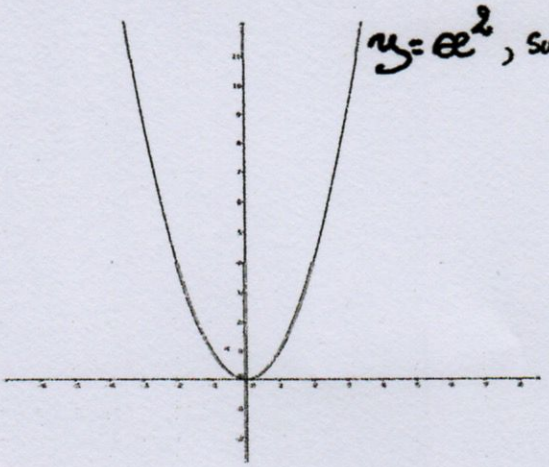
TS

Limites de fonctions numériques à une variable

$y = x^2$, sur $\mathbb{R}$

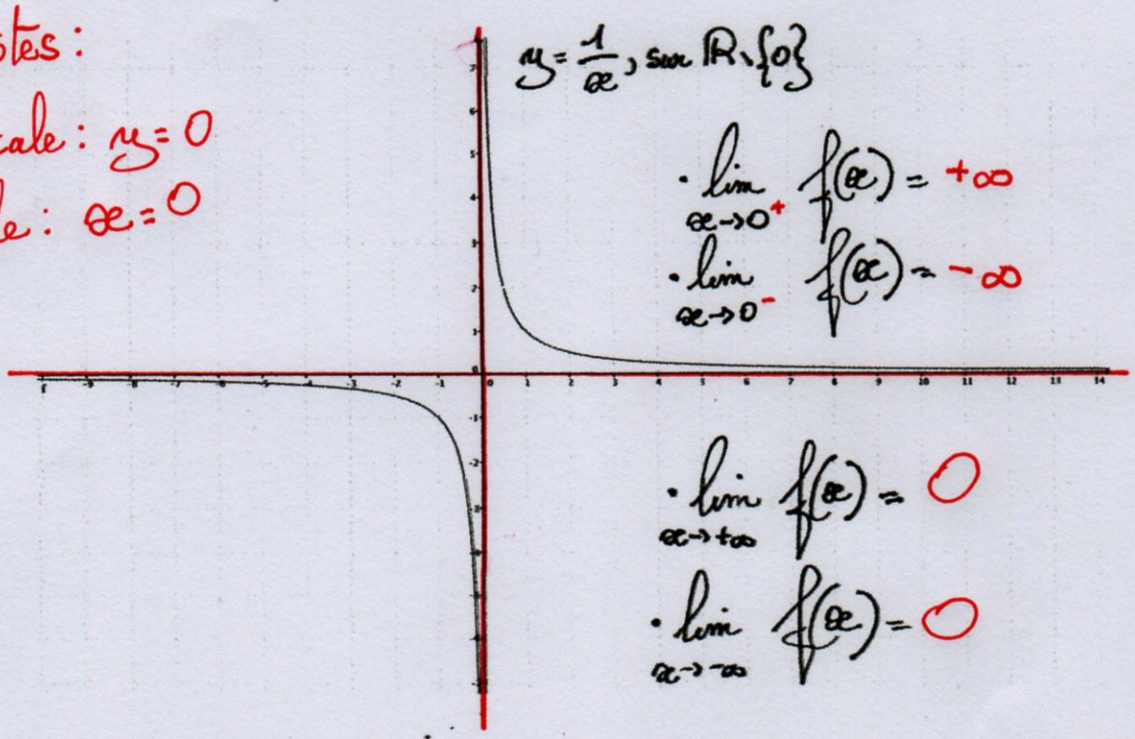


- $\lim\limits_{x \to 0} f(x) = f(0) = 0$
- $\lim\limits_{x \to +\infty} f(x) = +\infty$
- $\lim\limits_{x \to -\infty} f(x) = +\infty$

Asymptotes :

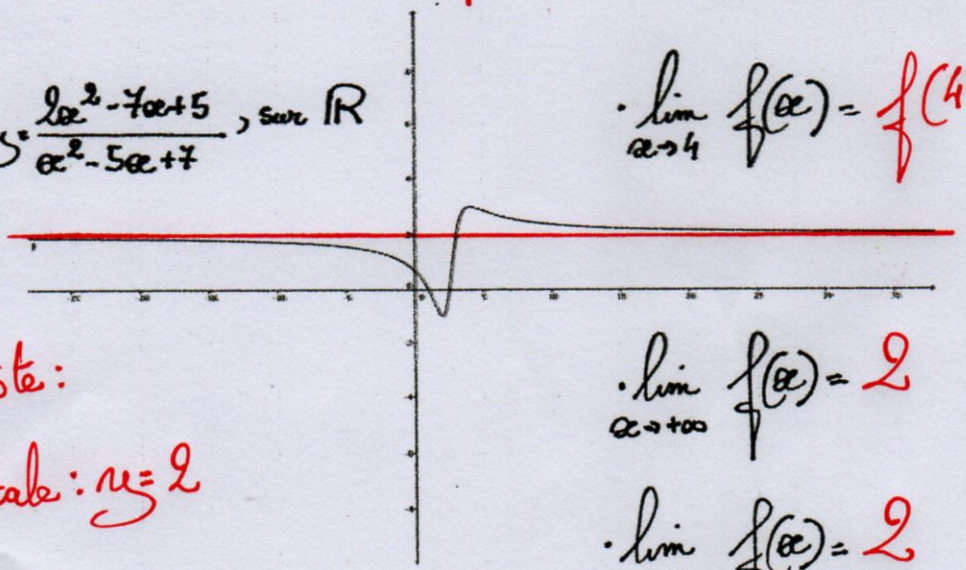
- horizontale : $y = 0$
- verticale : $x = 0$

$y = \frac{1}{x}$, sur $\mathbb{R} \setminus \{0\}$



- $\lim\limits_{x \to 0^+} f(x) = +\infty$
- $\lim\limits_{x \to 0^-} f(x) = -\infty$
- $\lim\limits_{x \to +\infty} f(x) = 0$
- $\lim\limits_{x \to -\infty} f(x) = 0$

$y = \frac{2x^2 - 7x + 5}{x^2 - 5x + 7}$, sur $\mathbb{R}$



- $\lim\limits_{x \to 4} f(x) = f(4) = 3$
- $\lim\limits_{x \to +\infty} f(x) = 2$
- $\lim\limits_{x \to -\infty} f(x) = 2$

Asymptote :

- horizontale : $y = 2$

TS

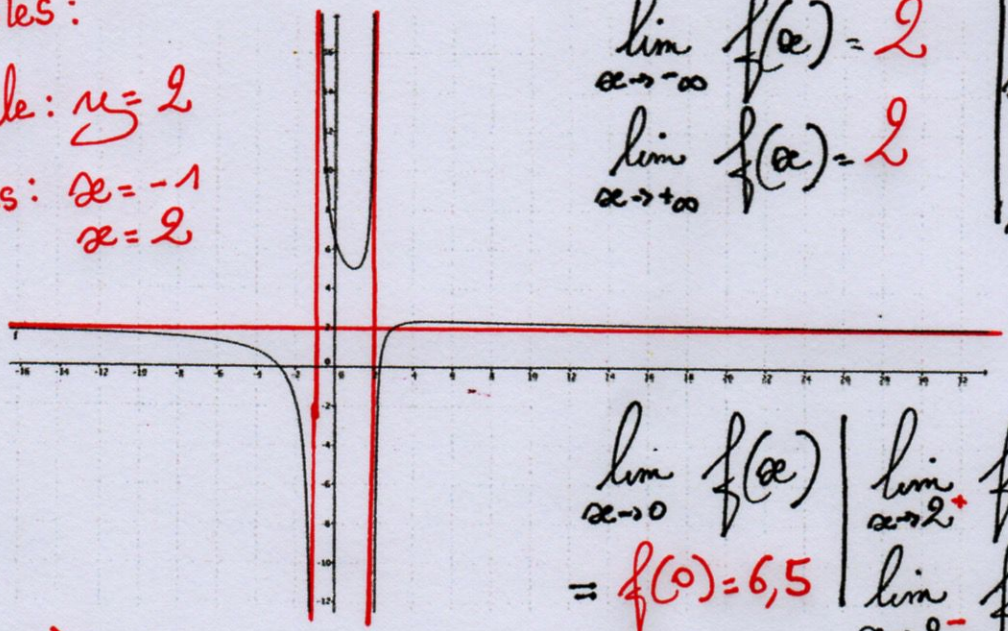
$y = \dfrac{2x^2+x-13}{x^2-x-2}$ sur $\mathbb{R}\setminus\{-1;2\}$

Asymptotes :

- horizontale : $y = 2$
- verticales : $x = -1$, $x = 2$

$\lim\limits_{x\to-\infty} f(x) = 2$ | $\lim\limits_{x\to-1^-} f(x) = -\infty$

$\lim\limits_{x\to+\infty} f(x) = 2$ | $\lim\limits_{x\to-1^+} f(x) = +\infty$



$\lim\limits_{x\to0} f(x) = f(0) = 6{,}5$ | $\lim\limits_{x\to2^+} f(x) = +\infty$

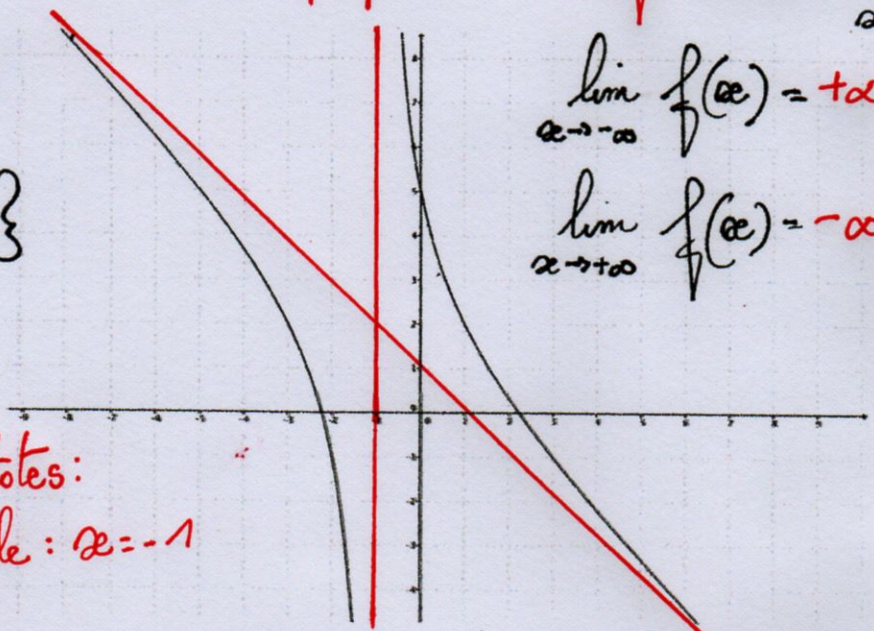
| $\lim\limits_{x\to2^-} f(x) = -\infty$

$y = \dfrac{-x^2+5}{x-1}$

sur $\mathbb{R}\setminus\{1\}$

$\lim\limits_{x\to-\infty} f(x) = +\infty$ | $\lim\limits_{x\to-1^-} f(x) = -\infty$

$\lim\limits_{x\to+\infty} f(x) = -\infty$ | $\lim\limits_{x\to-1^+} f(x) = +\infty$



Asymptotes :

- verticale : $x = -1$
- oblique !

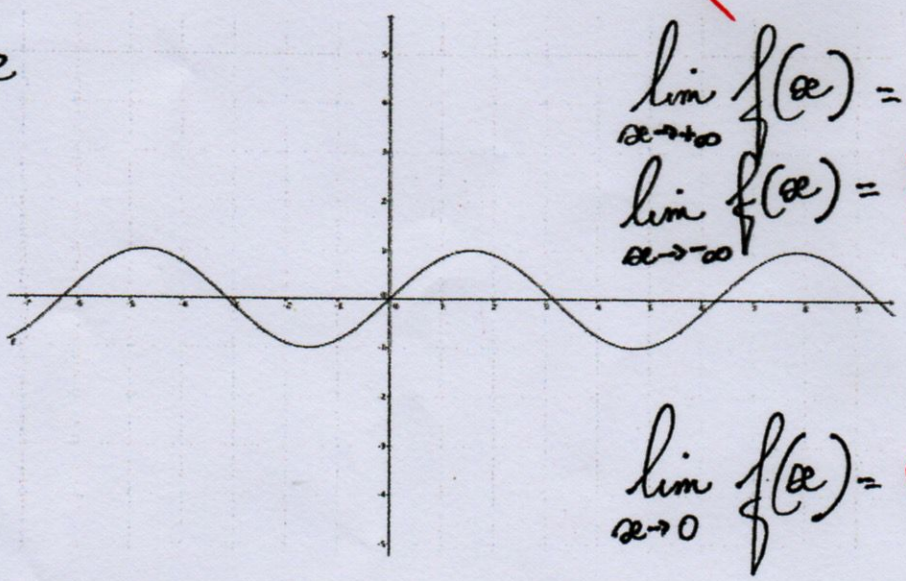
$y = \sin x$

sur $\mathbb{R}$

$\lim\limits_{x\to+\infty} f(x) = ?$

$\lim\limits_{x\to-\infty} f(x) = ?$

} n'existent pas !



$\lim\limits_{x\to0} f(x) = 0$