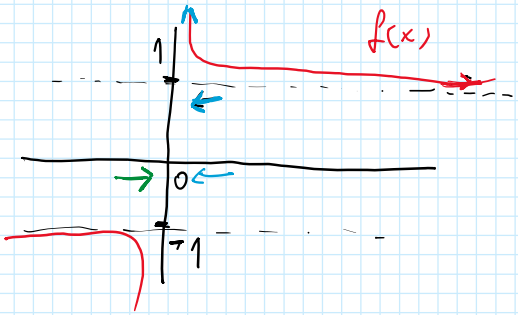
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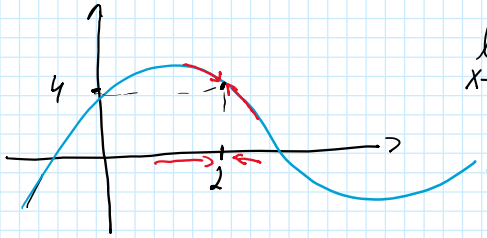
$\lim_{x\to\infty} f(x) = 1$

$\lim_{x\to-\infty} f(x) = -1$

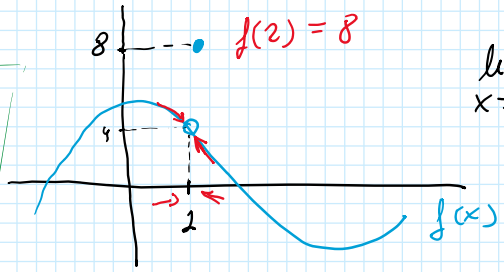
$\lim_{x\to 0^+} f(x) = \infty$

$\lim_{x\to 0^-} f(x) = -\infty$

$\lim_{x\to 0} f(x) \Rightarrow$ neexistuje

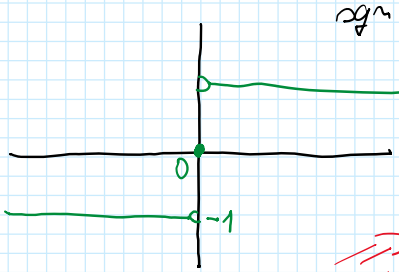


$\lim_{x\to 2} f(x) = 4$



$\lim_{x\to 2} f(x) = 4$

$\operatorname{sgn}(x)$ $\begin{cases} x<0 & f(x)=-1 \\ x=0 & f(x)=0 \\ x>0 & f(x)=1 \end{cases}$



$\lim_{x\to 0} f(x)$ = neexistuje

$\lim_{x\to 0^+} f(x) = 1$ $\lim_{x\to 0^-} f(x) = -1$

$$\lim_{x\to\infty} \frac{P(x)}{Q(x)}$$

$$\lim_{x\to\infty} \frac{7x^3 + 4x^2 + 2}{3x^3 + 2x^2 + x + 1} = \frac{7}{3}$$

$st.P(x) = st.Q(x)$ (3 = 3)

$$\lim_{x\to\infty} \frac{7x^3 + 4x^2 + 2}{x^1 + 1} = \lim_{x\to\infty} \frac{x\left(7x^3 + 4x + \frac{2}{x}\right)}{x\left(1 + \frac{1}{x}\right)} = \frac{\infty}{1} = \infty$$

($x \to \infty$, $7x^3 + 4x + \frac{2}{x} \to \infty$, $1 + \frac{1}{x} \to 1$)

$st.P(x) > st.Q(x)$ (3 > 1) $\Rightarrow \lim_{x\to\infty} \frac{P(x)}{Q(x)} = \infty$

$$\lim_{x\to\infty}\frac{4x^2+2}{3x^3+2x^2+x+1}=\lim_{x\to\infty}\frac{x^3\left(\frac{4}{x}+\frac{2}{x^3}\right)}{x^3\left(3+\frac{2}{x}+\frac{1}{x^2}+\frac{1}{x^3}\right)}=\frac{0}{3}=0$$

$\alpha P(x) < \alpha Q(x) \Rightarrow \lim_{x\to\infty}\frac{P(x)}{Q(x)}=0$

$$\lim_{x\to\infty}\frac{3x^3+2x^2+x+7}{2x^2+1x^3+3}=3$$

$$\lim_{x\to\infty}\frac{2x^5+3x^2+x+1}{2x^1+3x^2+x^7+2}=0$$

$$\lim_{x\to\infty}\frac{2x^3+3x^4+4x^5+2x^4+x+11}{3x^2+2x^3+5x^5+9x^7+5}=\frac{3}{4}$$

$$\lim_{x\to 1^-}\frac{x^2}{3-3x}=\frac{1}{0^+}=\infty$$

$3-3\cdot 0{,}9999=2{,}9995$

0,9999 1,001 → 1 ←

$$\lim_{x\to 1^+}\frac{x^2}{3-3x}=\frac{1}{0^-}=-\infty$$

$3-3\cdot 1{,}003=3{,}009$

$$\lim_{x\to -3^-}\frac{x}{x^2-9}=\frac{-3}{0^+}=-\infty$$

-2,9999 ← → -3,001 -3

$$\lim_{x\to -3^+}\frac{x}{x^2-9}=\frac{-3}{0^-}=\infty$$

$(-2{,}9995)^2-9$

$D(f)=(-\infty;3)\cup(4;\infty)$

$\lim_{x\to 3^-} f(x)$ $\lim_{x\to 4^+} f(x)$

$\frac{1}{0{,}1}=10$

$\frac{1}{0{,}01}=100$

$\frac{1}{0{,}0001}=10\,000$

$= \frac{1}{0^+}=\infty$

$\frac{1}{-0{,}1}=-10$

$\frac{1}{-0{,}01}=-100$

$\frac{1}{-0{,}0001}=-10\,000$

$= \frac{1}{0^-}=-\infty$