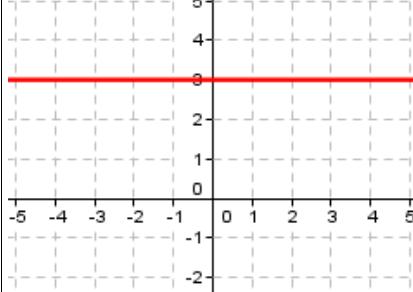
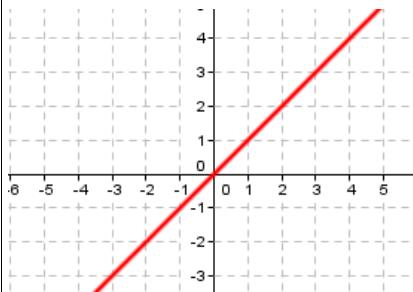
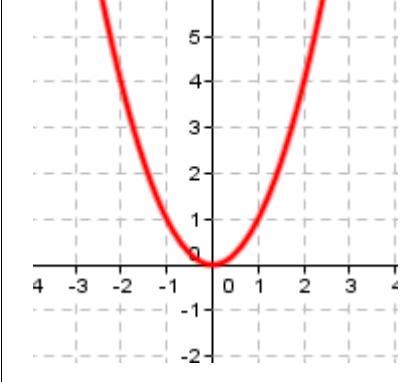
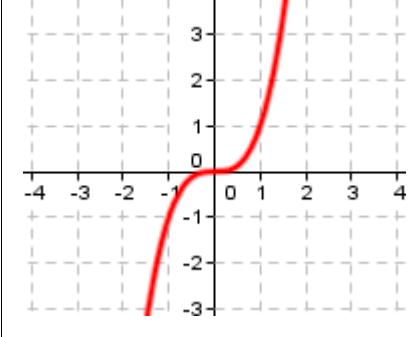
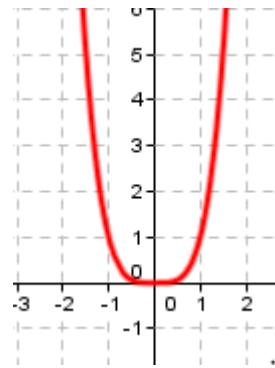


Limiti di funzioni elementari

FUNZIONI ALGEBRICHE RAZIONALI ELEMENTARI		
$f(x) = k$		$\lim_{x \rightarrow +\infty} f(x) = k$ $\lim_{x \rightarrow a} f(x) = k$ $\lim_{x \rightarrow -\infty} f(x) = k$
$f(x) = x$		$\lim_{x \rightarrow +\infty} f(x) = +\infty$ $\lim_{x \rightarrow x_0} f(x) = x_0$ $\lim_{x \rightarrow -\infty} f(x) = -\infty$
$f(x) = x^2$		$\lim_{x \rightarrow +\infty} f(x) = +\infty$ $\lim_{x \rightarrow x_0} f(x) = x_0^2$ $\lim_{x \rightarrow -\infty} f(x) = +\infty$
$f(x) = x^3$		$\lim_{x \rightarrow +\infty} f(x) = +\infty$ $\lim_{x \rightarrow x_0} f(x) = x_0^3$ $\lim_{x \rightarrow -\infty} f(x) = -\infty$

$$f(x) = x^n \quad n \text{ pari}$$

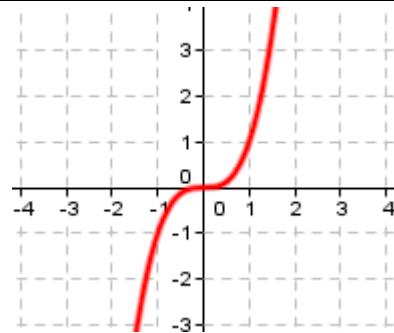


$$\lim_{x \rightarrow +\infty} f(x) = +\infty$$

$$\lim_{x \rightarrow x_0} f(x) = x_0^n$$

$$\lim_{x \rightarrow -\infty} f(x) = +\infty$$

$$f(x) = x^n \quad n \text{ dispari}$$

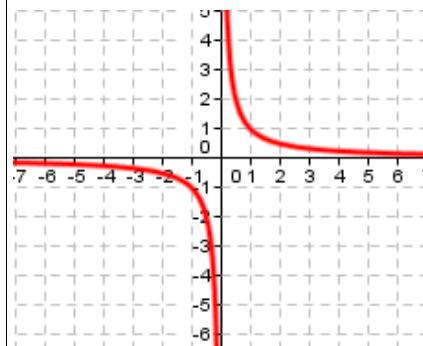


$$\lim_{x \rightarrow +\infty} f(x) = +\infty$$

$$\lim_{x \rightarrow x_0} f(x) = x_0^n$$

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

$$f(x) = \frac{1}{x}$$



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

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

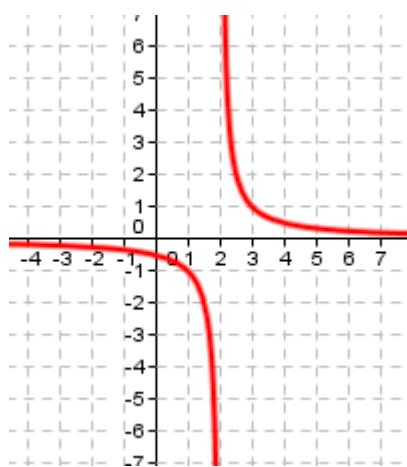
$$x_0 \neq 0 \quad \lim_{x \rightarrow x_0} f(x) = \frac{1}{x_0}$$

$$x_0 = 0$$

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

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

$$f(x) = \frac{1}{x-a}$$



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

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

$$x_0 \neq a \quad \lim_{x \rightarrow x_0} f(x) = \frac{1}{x_0 - a}$$

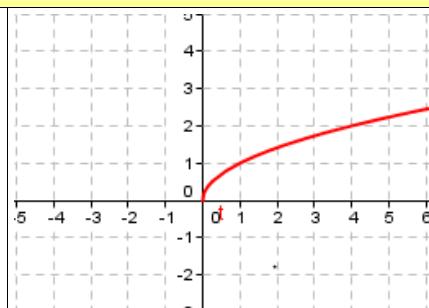
$$x_0 = a$$

$$\lim_{x \rightarrow a^+} f(x) = +\infty$$

$$\lim_{x \rightarrow a^-} f(x) = -\infty$$

Grafico per $a=2$ **FUNZIONI ALGEBRICHE IRRAZIONALI ELEMENTARI**

$$f(x) = \sqrt{x}$$

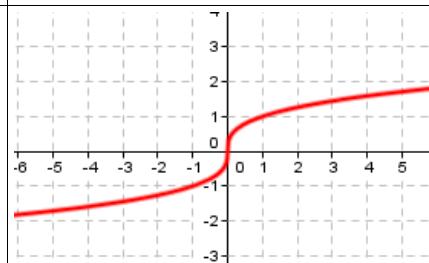


$$\lim_{x \rightarrow +\infty} f(x) = +\infty$$

$$\lim_{x \rightarrow x_0} f(x) = \sqrt{x_0}, x_0 > 0$$

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

$$f(x) = \sqrt[3]{x}$$

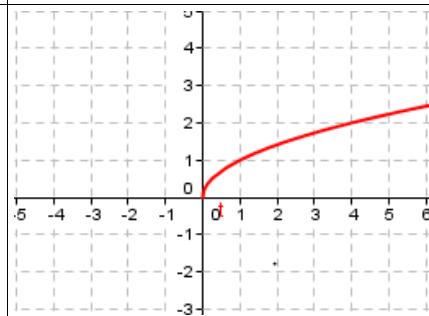


$$\lim_{x \rightarrow +\infty} f(x) = +\infty$$

$$\lim_{x \rightarrow x_0} f(x) = \sqrt[3]{x_0}$$

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

$$f(x) = \sqrt[n]{x} \quad n \text{ pari}$$

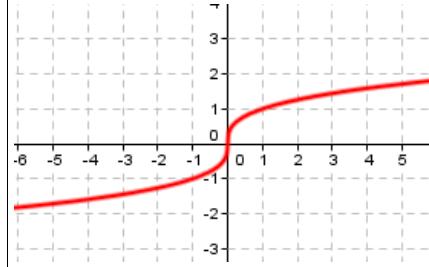


$$\lim_{x \rightarrow +\infty} f(x) = +\infty$$

$$\lim_{x \rightarrow x_0} f(x) = \sqrt[n]{x_0}$$

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

$$f(x) = \sqrt[n]{x} \quad n \text{ dispari}$$



$$\lim_{x \rightarrow +\infty} f(x) = +\infty$$

$$\lim_{x \rightarrow x_0} f(x) = \sqrt[3]{x_0}$$

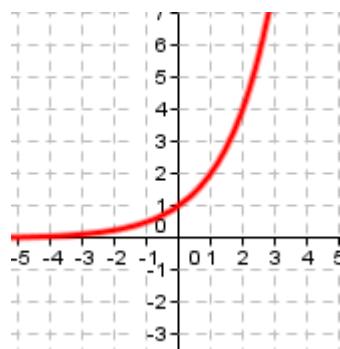
$$\lim_{x \rightarrow -\infty} f(x) = -\infty$$

FUNZIONI TRIGONOMETRICHE

$f(x) = \sin(x)$		$\lim_{x \rightarrow +\infty} f(x)$ Non esiste $\lim_{x \rightarrow x_0} f(x) = \sin(x_0)$ $\lim_{x \rightarrow -\infty} f(x)$ Non esiste
$f(x) = \cos(x)$		$\lim_{x \rightarrow +\infty} f(x)$ Non esiste $\lim_{x \rightarrow x_0} f(x) = \cos(x_0)$ $\lim_{x \rightarrow -\infty} f(x)$ Non esiste
$f(x) = \tan(x)$		$x_0 \neq \frac{\pi}{2} + k\pi$ $\lim_{x \rightarrow x_0} f(x) = \tan(x_0)$ $\lim_{x \rightarrow \frac{\pi}{2}^+} f(x) = +\infty$ $\lim_{x \rightarrow \frac{\pi}{2}^-} f(x) = -\infty$

FUNZIONE ESPONENZIALE E LOGARITMICA

$$f(x) = a^x, \quad a > 1$$

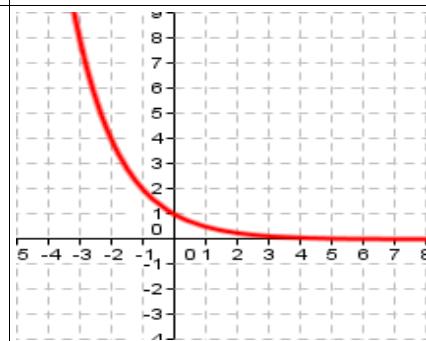


$$\lim_{x \rightarrow +\infty} f(x) = +\infty$$

$$\lim_{x \rightarrow x_0} f(x) = a^{x_0}$$

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

$$f(x) = a^x, \quad 0 < a < 1$$

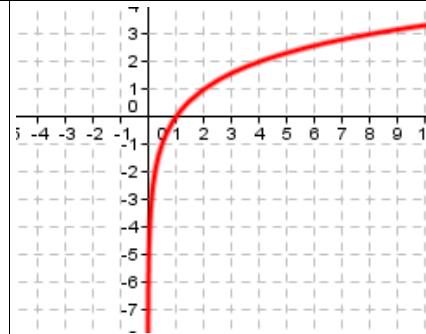


$$\lim_{x \rightarrow +\infty} f(x) = 0$$

$$\lim_{x \rightarrow x_0} f(x) = a^{x_0}$$

$$\lim_{x \rightarrow -\infty} f(x) = +\infty$$

$$f(x) = \log_a(x), \quad a > 1$$

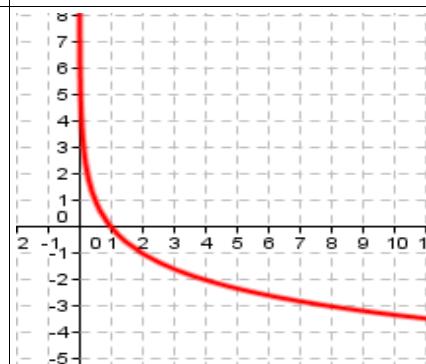


$$\lim_{x \rightarrow +\infty} f(x) = +\infty$$

$$\lim_{x \rightarrow x_0} f(x) = \log_a(x_0)$$

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

$$f(x) = \log_a(x), \quad 0 < a < 1$$



$$\lim_{x \rightarrow +\infty} f(x) = -\infty$$

$$\lim_{x \rightarrow x_0} f(x) = \log_a(x_0)$$

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