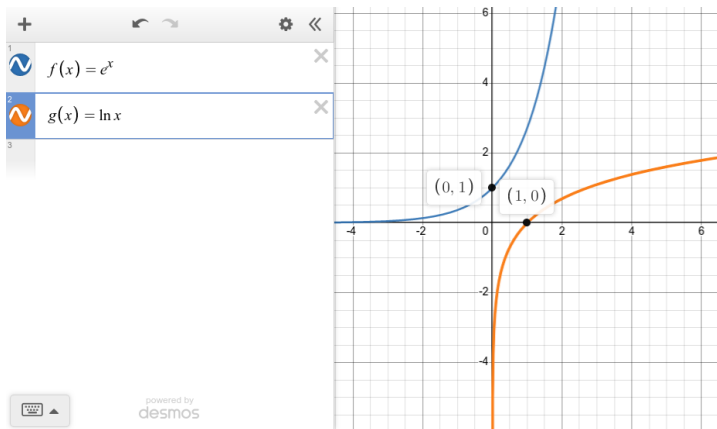
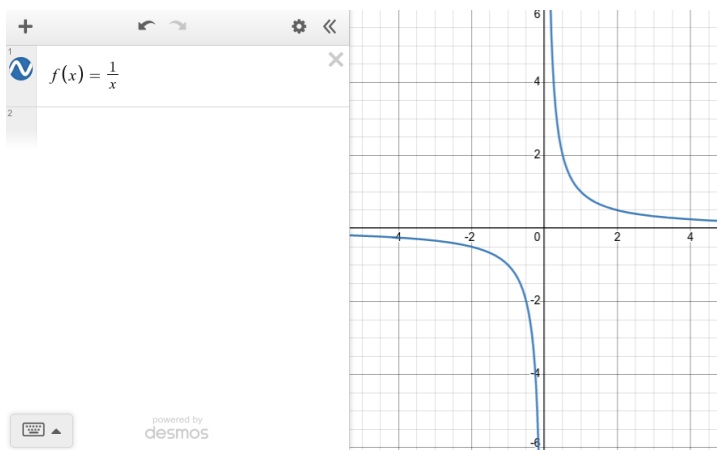


Gráficas notables

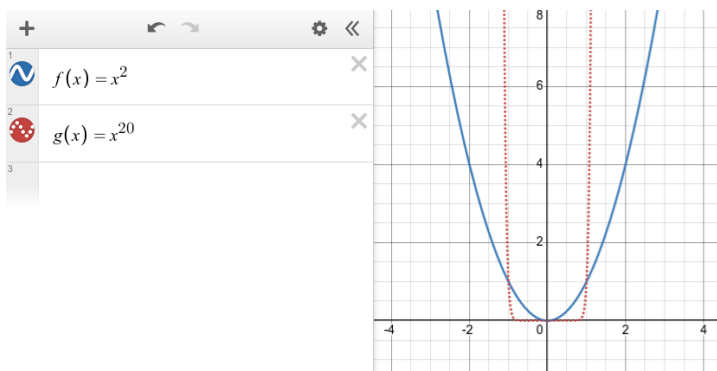
Exponencial natural y logarítmica natural



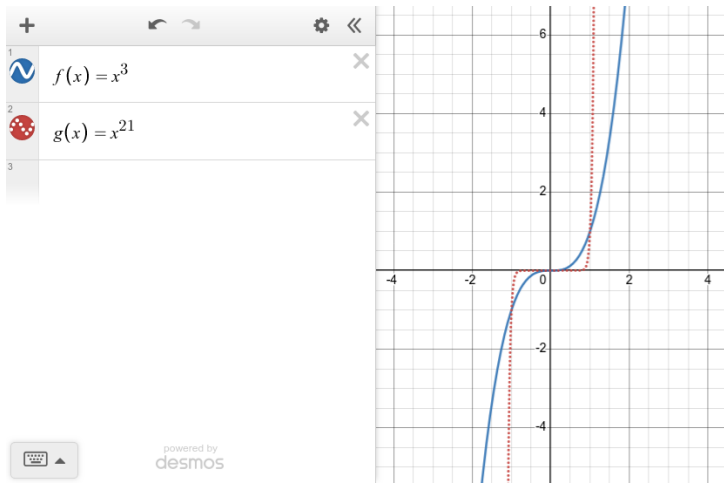
Inversa



$$x^n; n\%2 = 0$$

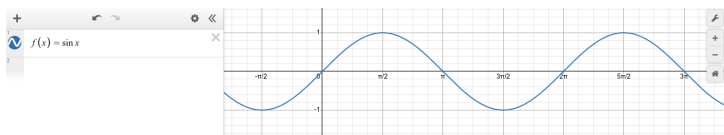


$$x^n; n\%2 \neq 0$$

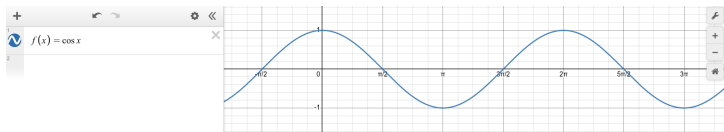


Trigonométricas

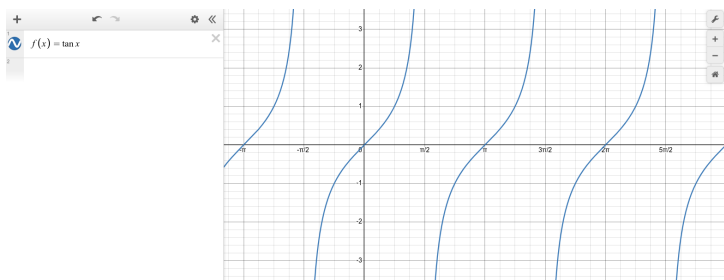
Seno



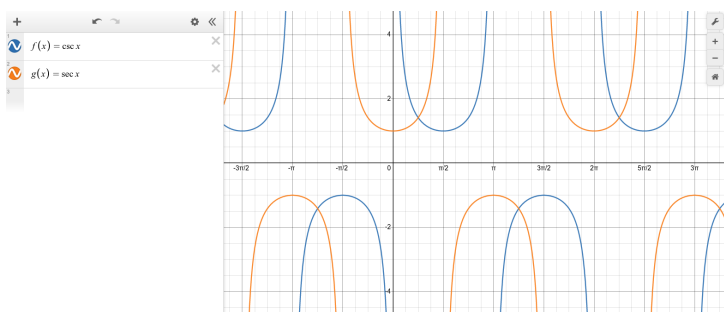
Coseno



Tangente



Secante y cosecante



Inversa

Graficar

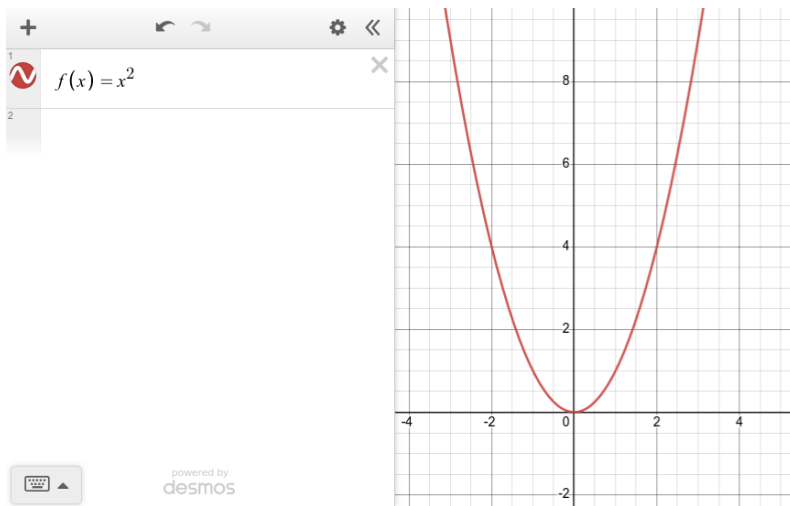
Si $g(x)$ es inversa de $f(x)$. Grafica la reflexión de $f(x)$ en $x = y$.



Simetría

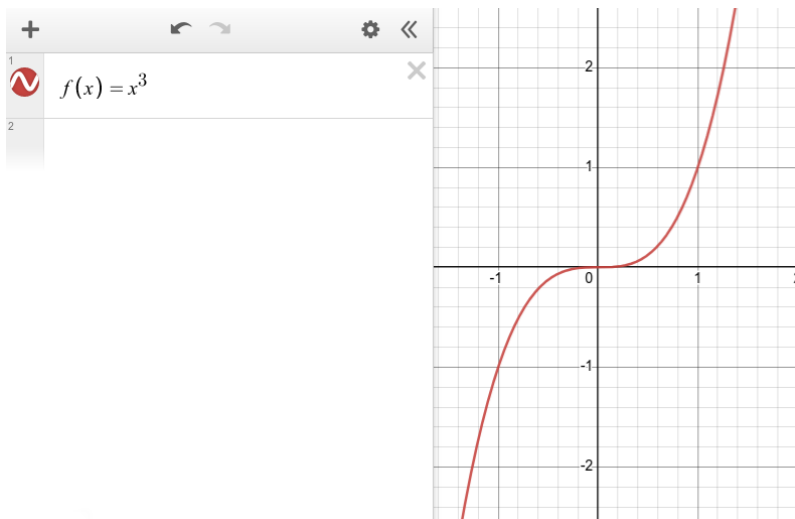
y de x (par)

$$f(x) = f(-x)$$



y de x (impar)

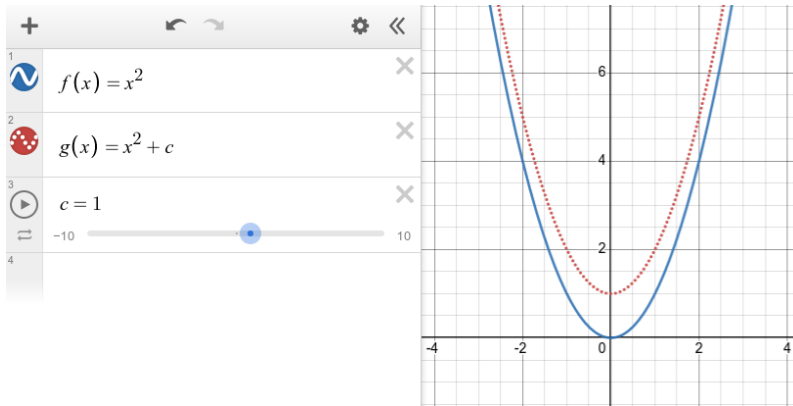
$$-f(x) = f(-x)$$



Transformaciones

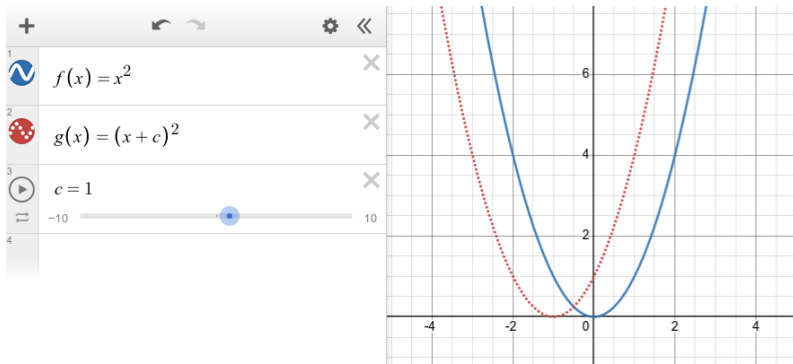
$$y = f(x) + c$$

$+c \uparrow$ $-c \downarrow$



$$y = f(x + c)$$

$+c \leftarrow$ $-c \rightarrow$

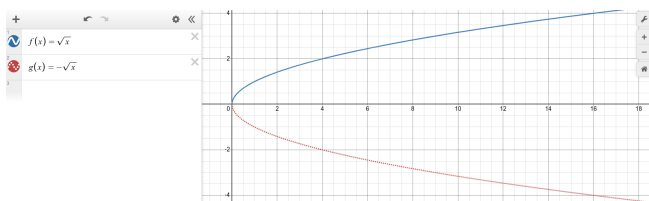


$$y = f(-x)$$

\updownarrow

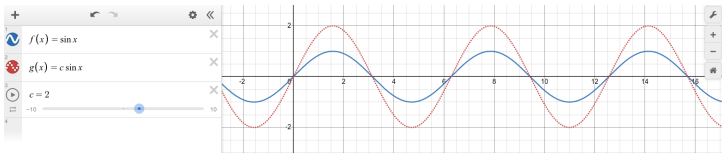


$$y = -f(x)$$



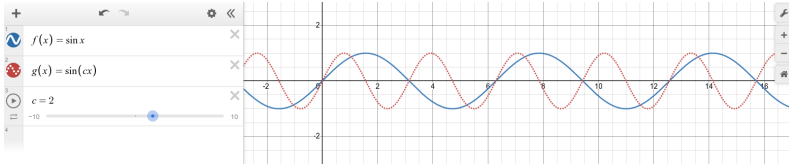
$$y = cf(x)$$

Extiende amplitud

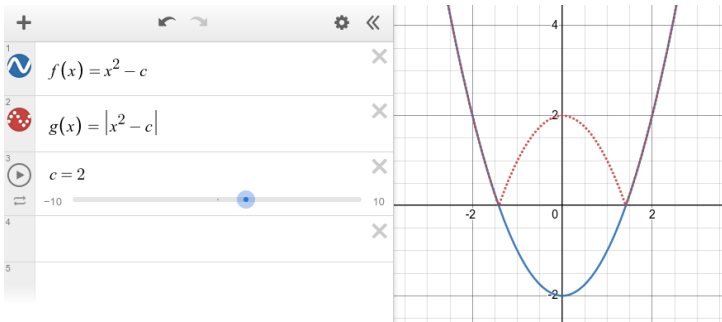
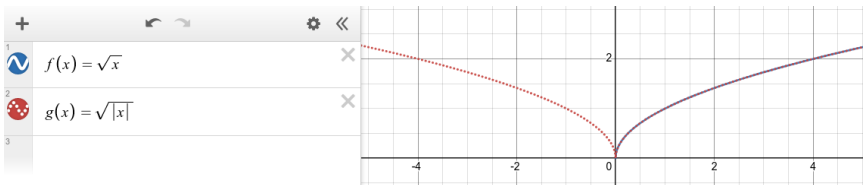


$$y = f(cx)$$

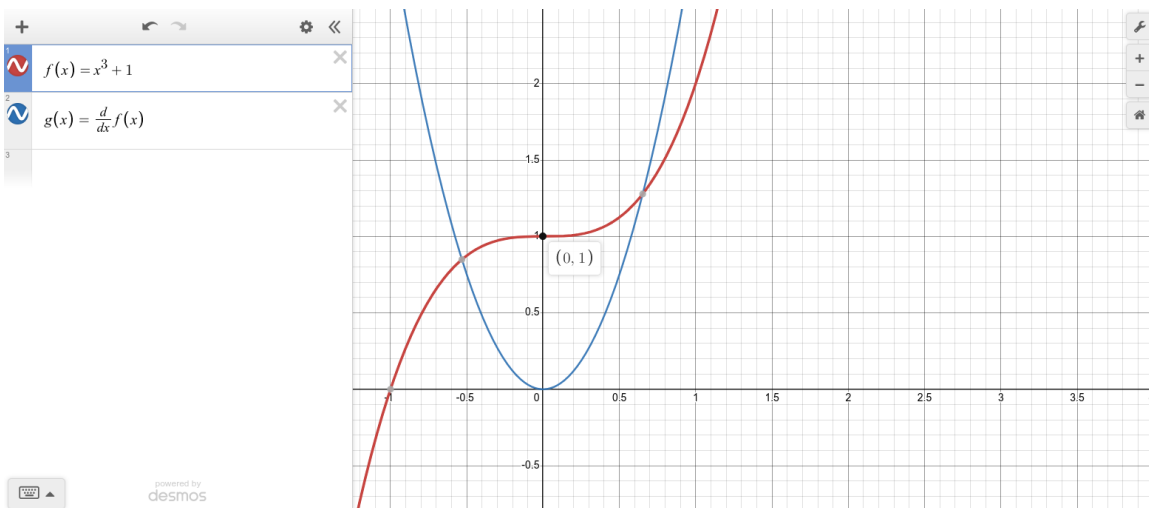
Reduce longitud de onda



Valor absoluto



Derivada de una función



Pasos para graficar una función

1. Cortes con los ejes

Cortes eje x : $f(x) = 0$

Cortes eje y : $f(0)$

2. Dominio

Valores no definidos: c_i

3. Asíntotas

Asíntota horizontal: $\lim_{x \rightarrow -\infty} f(x)$; $\lim_{x \rightarrow +\infty} f(x)$

c_i es asíntota vertical $\Leftrightarrow \lim_{x \rightarrow c_i} f(x) = \infty$

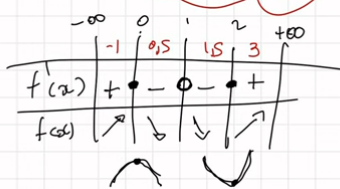
4. Intervalos de monotonía

Se relacionan con la primera derivada.

6. Considere la función $f(x) = \frac{x^2 - 4x + 4}{x - 1}$ con $f'(x) = \frac{x^2 - 2x}{(x - 1)^2}$ y $f''(x) = -\frac{2}{(x - 1)^3}$.

Monotonía:

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



\nearrow : $]-\infty, 0[$ y $]2, +\infty[$

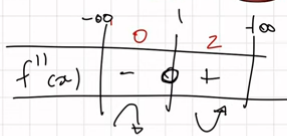
\searrow : $]0, 1[$ y $]1, 2[$

máximo relativo: $(0, 4)$

mínimo relativo: $(2, 0)$

Concavidad

$$f''(x) = -\frac{2}{(x - 1)^3}$$



No hay punto de inflexión

