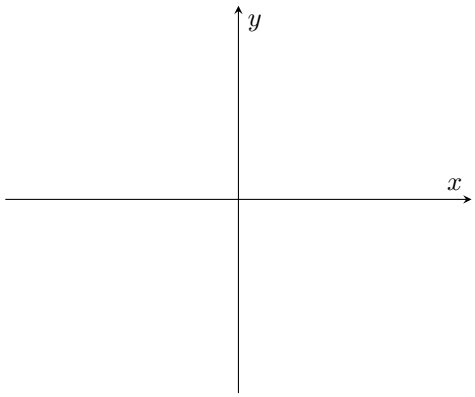
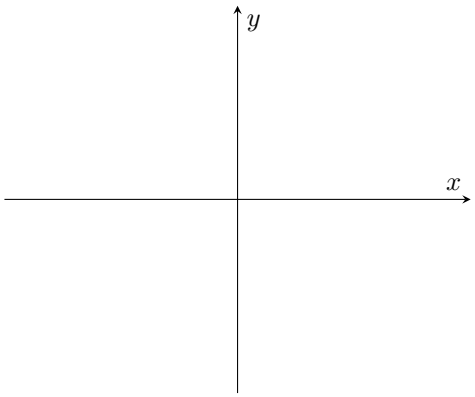
Notes

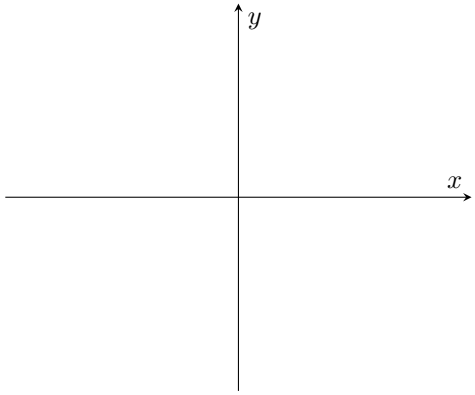
Graphs



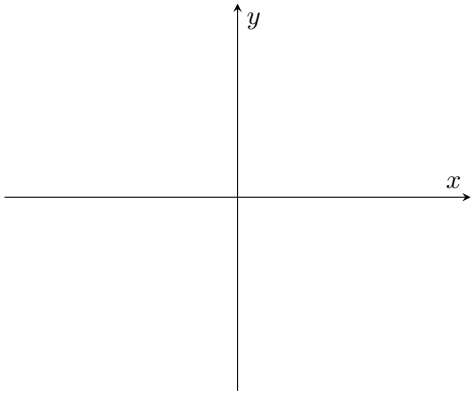
$y = x^2$



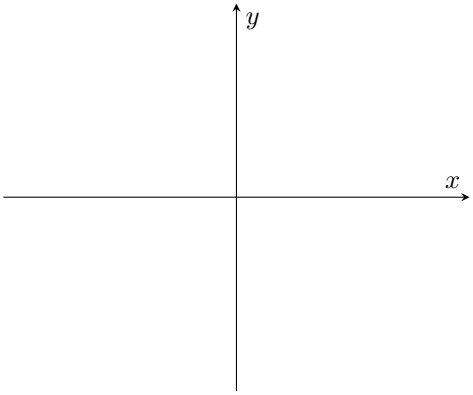
$y = x^3$



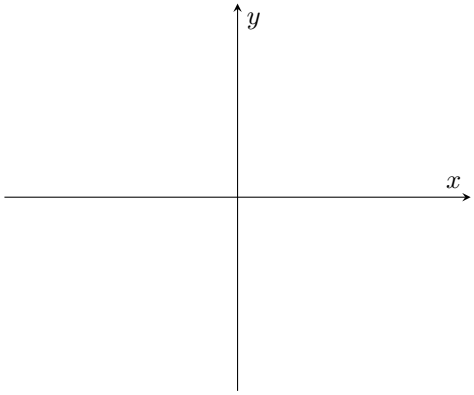
$y = x^4$



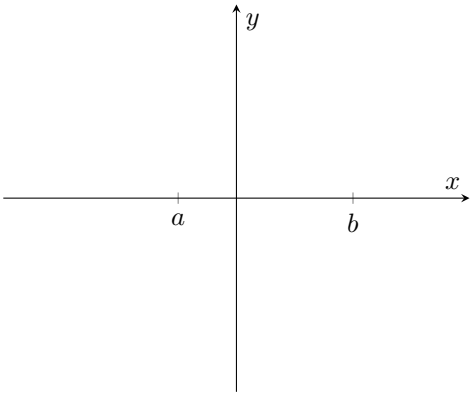
$y = x^5$



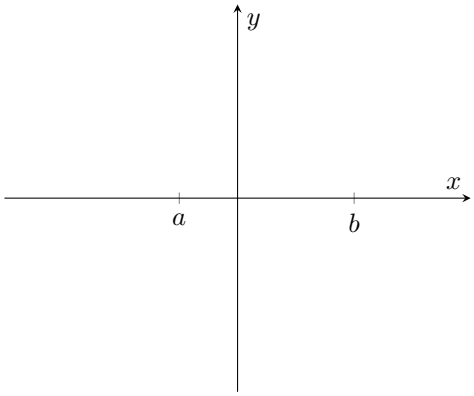
$y = -x^2 + 1$



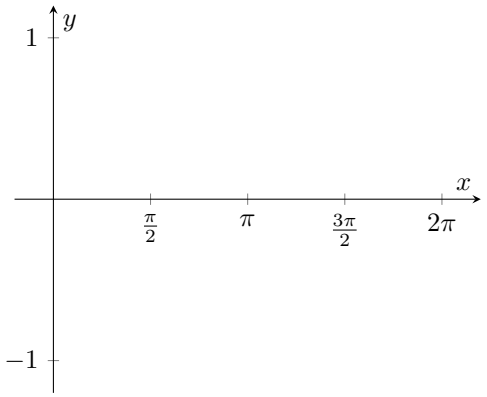
$y = -x^3 - 4$



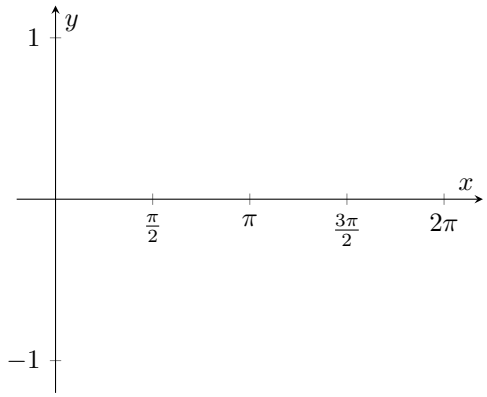
$y = (x - a)(x - b)$



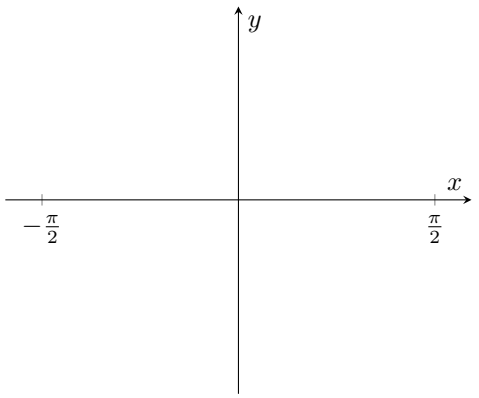
$y = -(x - a)(x - b)$



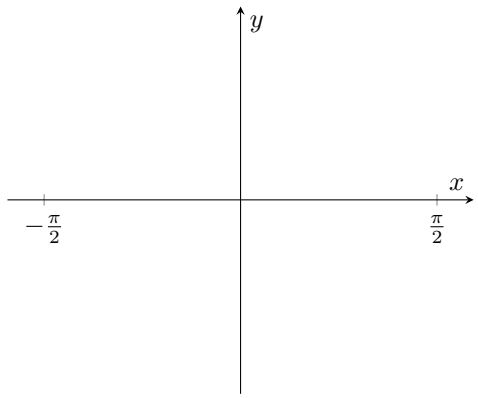
$y = \sin x$



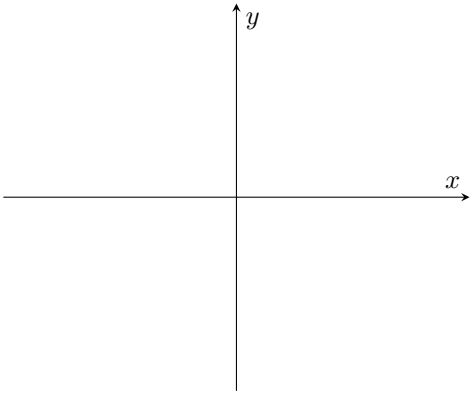
$y = \cos x$



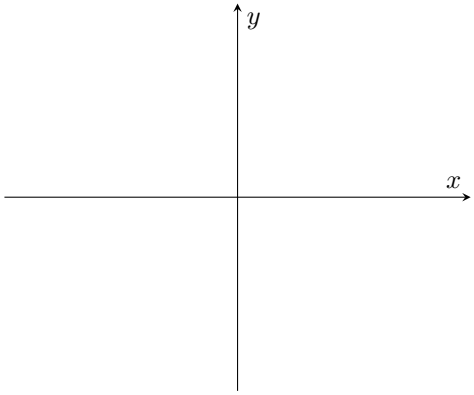
$y = \tan x$



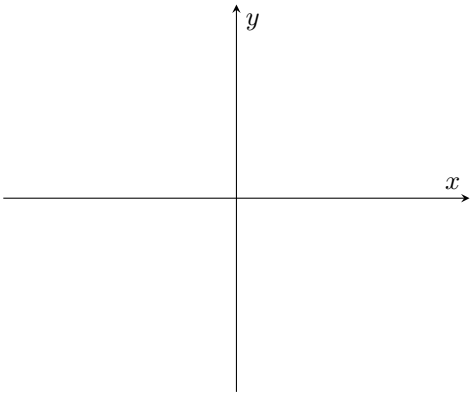
$y = \tan x + 1$



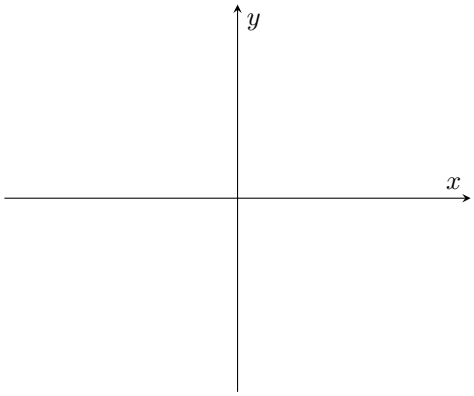
$y = \frac{1}{x}$



$y = \frac{1}{x^2}$



$y = e^x$



$y = \ln x$

Examples

Example 1. Find the area of the region bounded by the curves

$$f(x) = \frac{12}{x} \quad \text{and} \quad g(x) = -9x + 21.$$

Example 2. Find the area bounded by the curves

$$x = 13y - y^2 \quad \text{and} \quad x + y = 13.$$

Example 3. Find the area bounded by the curves

$$y = x^3 + 15 \quad \text{and} \quad y = 7x^2 + 18x + 15 \quad \text{where } x \geq 0.$$

Example 4. Find the equation of the horizontal line that divides the area of the region bounded by $y = 18 - x^2$ and $y = 0$ in half.