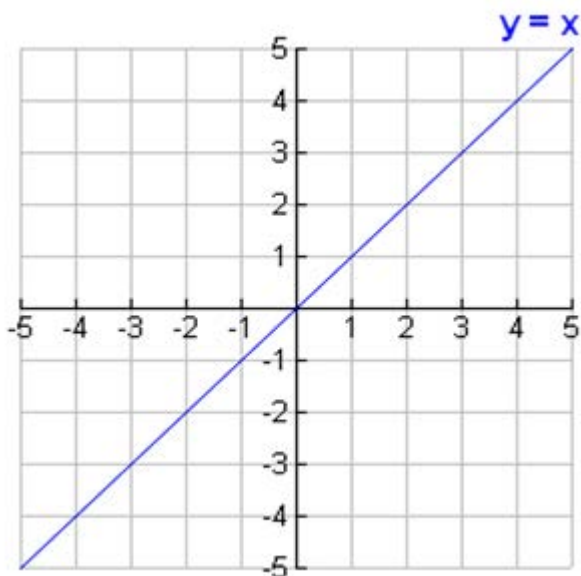


Common Parent Functions

Linear Function: $f(x) = x$



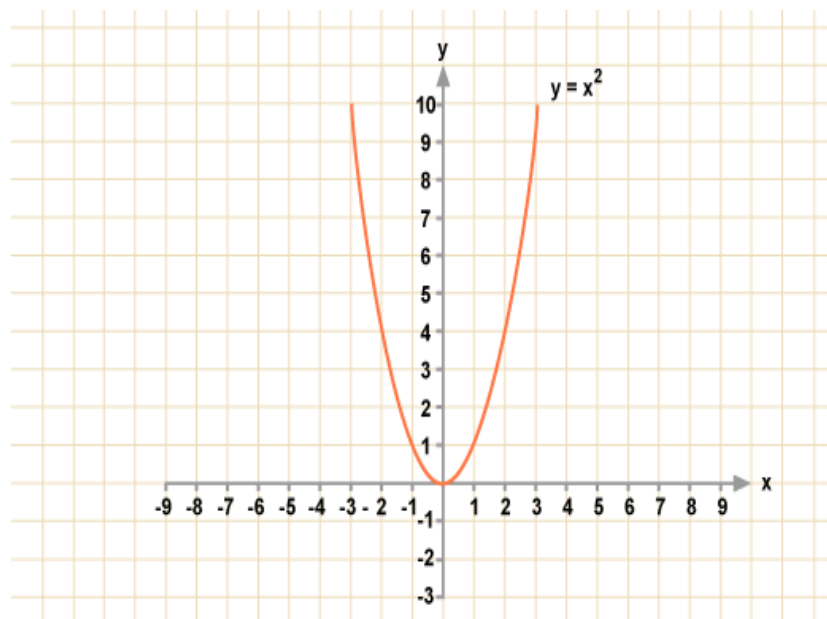
Domain: All real numbers

Range: All real numbers

X – Intercept: (0, 0)

Y – Intercept: (0, 0)

Quadratic Function: $f(x) = x^2$



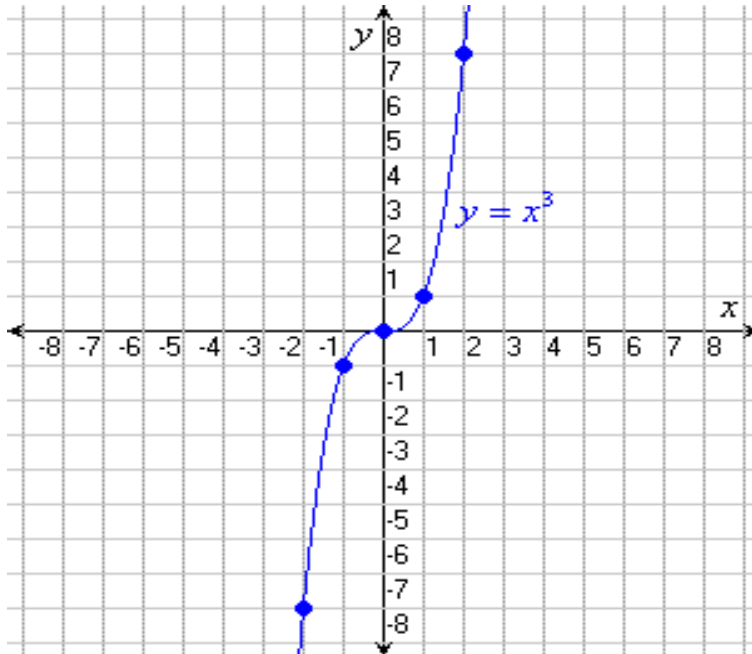
Domain: All real numbers

Range: $y \geq 0$

X – Intercept: (0, 0)

Y – Intercept: (0, 0)

Cubic Function: $f(x) = x^3$



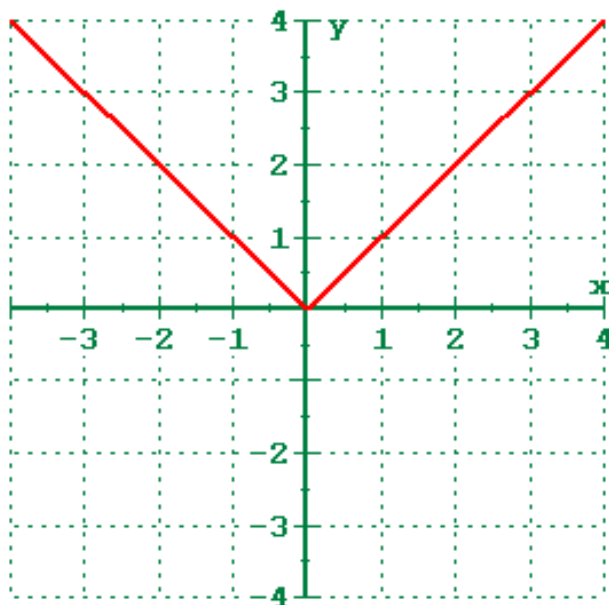
Domain: All real numbers

Range: All real numbers

X – Intercept: (0, 0)

Y – Intercept: (0, 0)

Absolute Value Function: $f(x) = |x|$



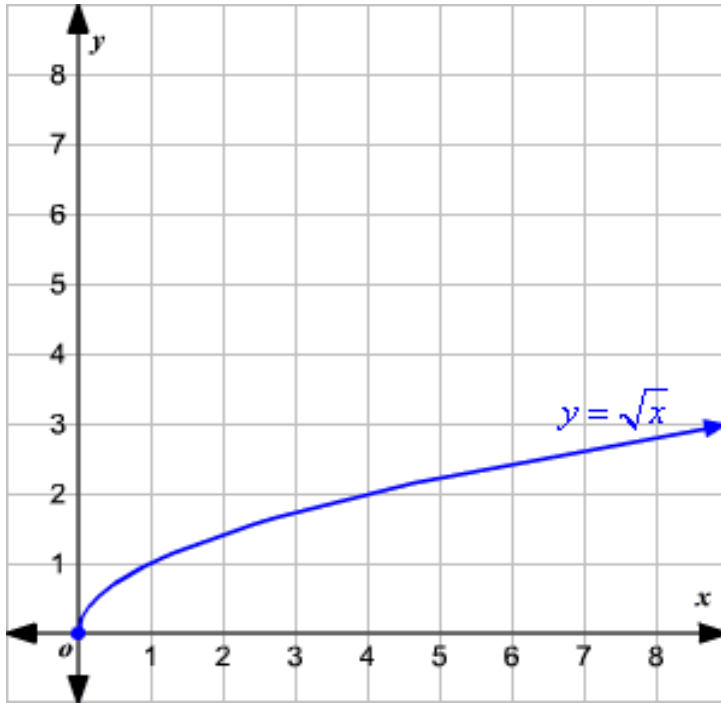
Domain: All real numbers

Range: $y \geq 0$

X – Intercept: (0, 0)

Y – Intercept: (0, 0)

Square Root Function: $f(x) = \sqrt{x}$



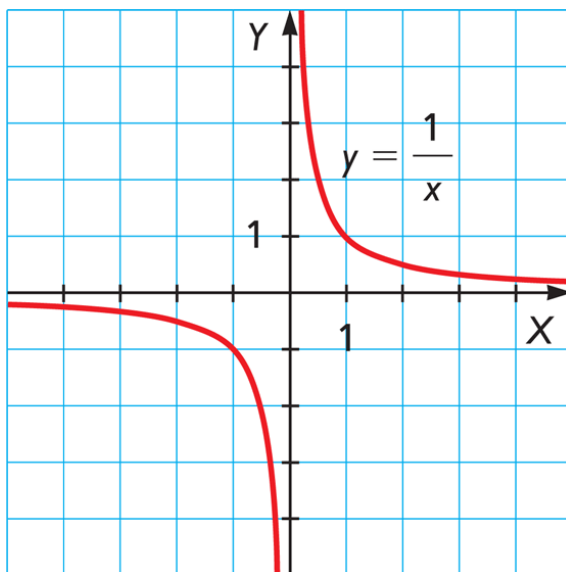
Domain: $x \geq 0$

Range: $y \geq 0$

X – Intercept: (0, 0)

Y – Intercept: (0, 0)

Reciprocal Function: $f(x) = \frac{1}{x}$



Domain: All real numbers; $x \neq 0$

Range: All real numbers; $y \neq 0$

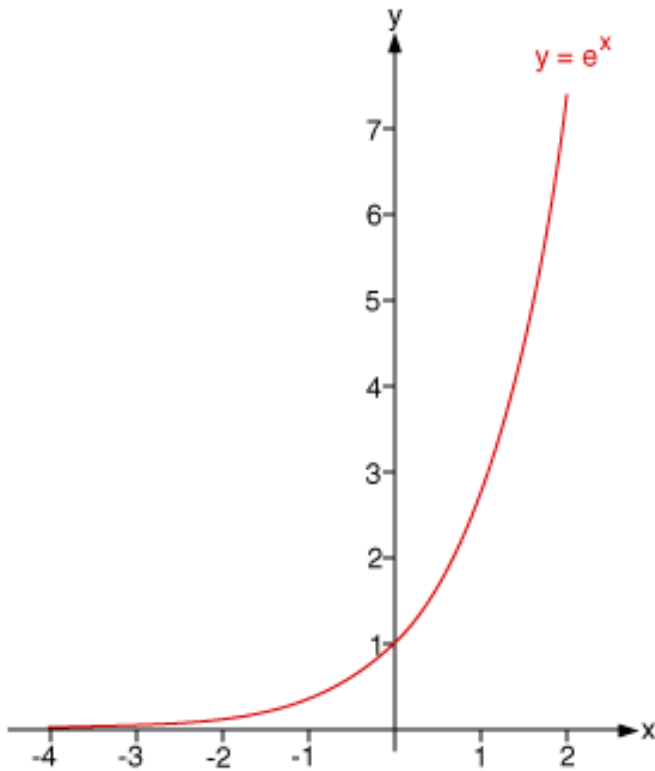
X – Intercept: Does not exist

Y – Intercept: Does not exist

Horizontal asymptote at $y = 0$

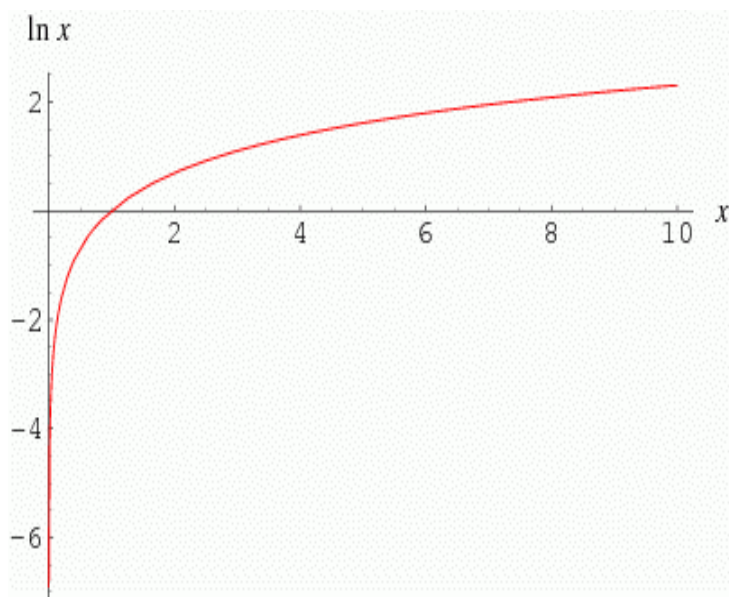
Vertical asymptote at $x = 0$

Natural Exponential Function: $f(x) = e^x$



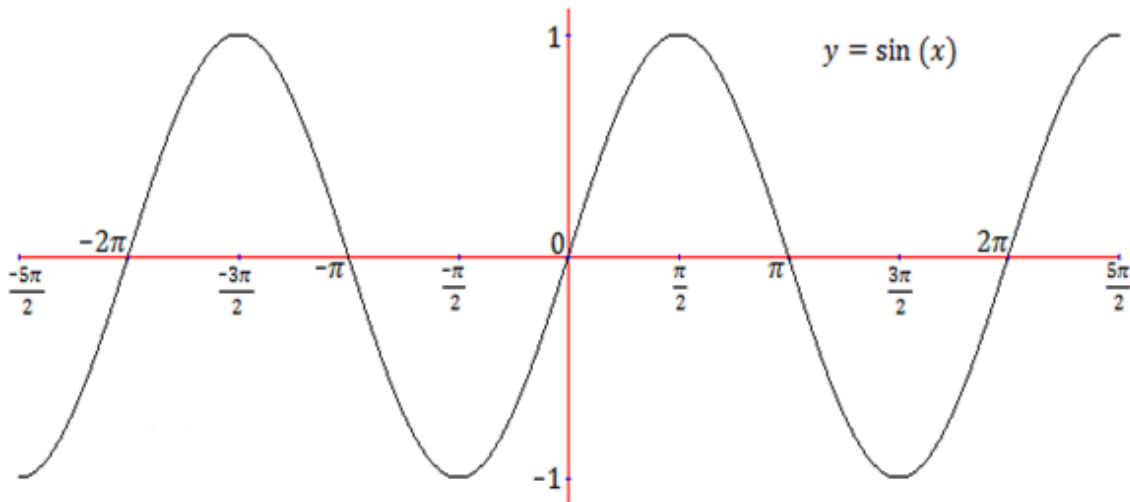
- Domain:** All real numbers
- Range:** $y > 0$
- X-Intercept:** Does not exist
- Y-Intercept:** (0, 1)
- Horizontal asymptote** at $y = 0$

Natural Logarithmic Function: $f(x) = \ln x$



- Domain:** $x > 0$
- Range:** All real numbers
- X-Intercept:** (1, 0)
- Y-Intercept:** Does not exist
- Vertical asymptote** at $x = 0$

Sine Function: $f(x) = \sin x$



Domain: All real numbers

Range: $-1 \leq x \leq 1$

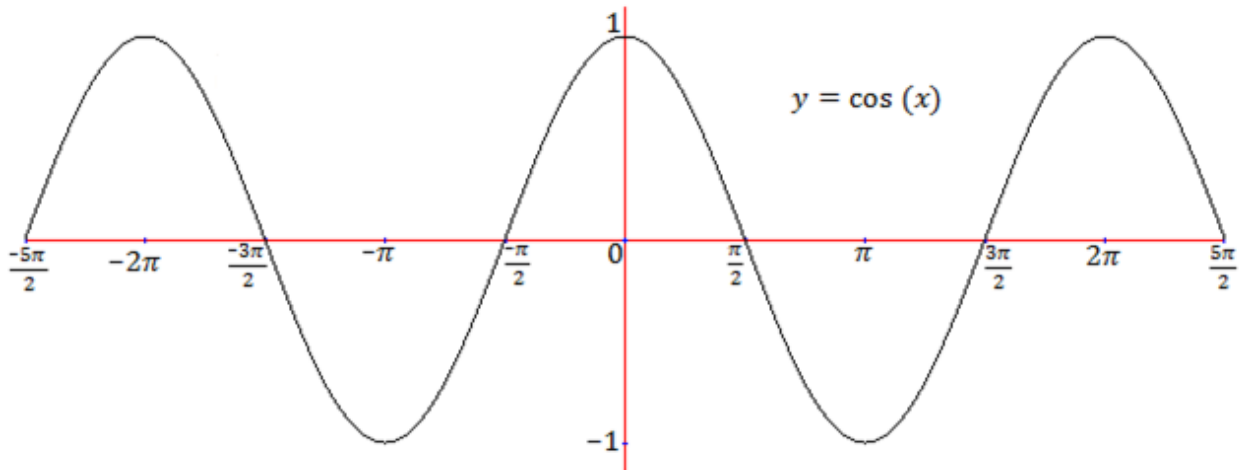
X – Intercept: $k\pi$, where k is an integer

Y – Intercept: 0

Period: 2π

Amplitude: 1

Cosine Function: $f(x) = \cos x$



Domain: All real numbers

Range: $-1 \leq x \leq 1$

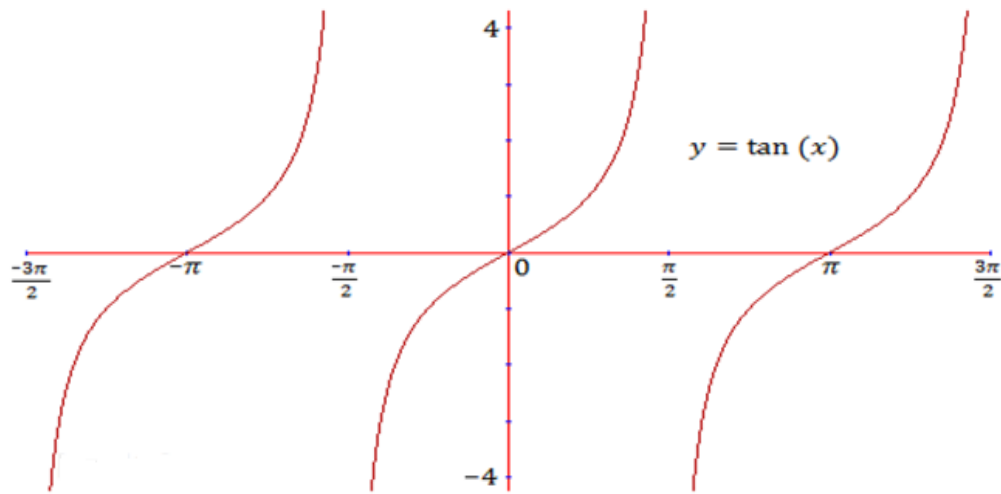
X – Intercept: $k\pi/2$, where k is an integer

Y – Intercept: 1

Period: 2π

Amplitude: 1

Tangent Function: $f(x) = \tan x$



Domain: All real numbers except $\pi/2 + k$, where k is an integer

Range: All real numbers

X-Intercept: $(k\pi, 0)$ where k is an integer

Y-Intercept: $(0, 0)$

Period: π

Amplitude: Does not exist

Vertical asymptotes at $\pi/2 + k\pi$, where k is an integer)