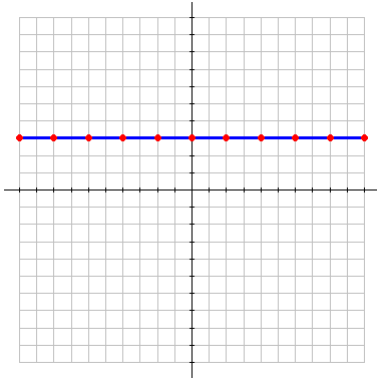
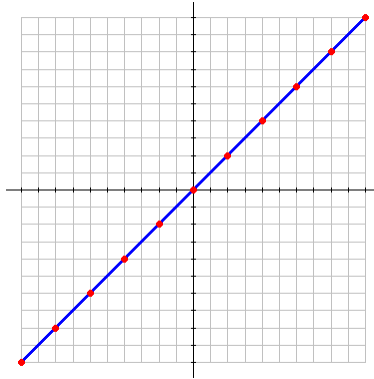


**Constant Function**

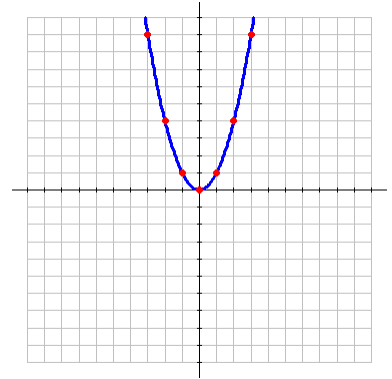
$$f(x) = a$$

Domain:  $(-\infty, \infty)$ Range:  $\{a\}$  $x$ -intercept: *none* $y$ -intercept:  $(0, a)$ **Linear Function**

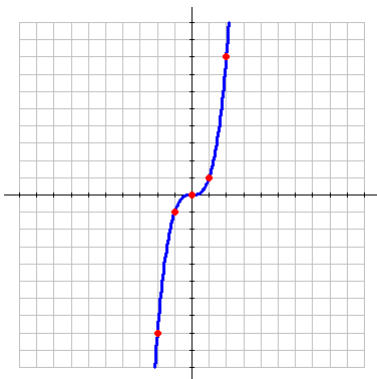
$$f(x) = x$$

Domain:  $(-\infty, \infty)$ Range:  $(-\infty, \infty)$  $x$ -intercept:  $(0, 0)$  $y$ -intercept:  $(0, 0)$ **Quadratic Function**

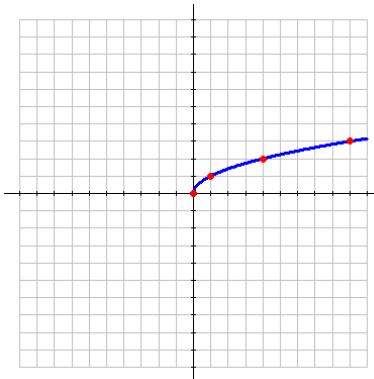
$$f(x) = x^2$$

Domain:  $(-\infty, \infty)$ Range:  $[0, \infty)$  $x$ -intercept:  $(0, 0)$  $y$ -intercept:  $(0, 0)$ **Cubic Function**

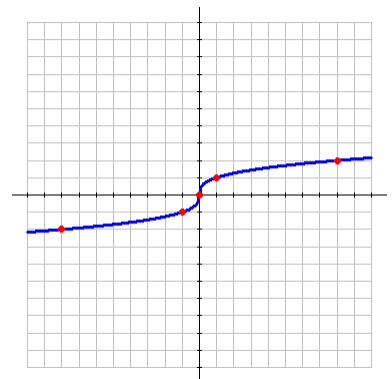
$$f(x) = x^3$$

Domain:  $(-\infty, \infty)$ Range:  $(-\infty, \infty)$  $x$ -intercept:  $(0, 0)$  $y$ -intercept:  $(0, 0)$ **Square Root Function**

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

Domain:  $[0, \infty)$ Range:  $[0, \infty)$  $x$ -intercept:  $(0, 0)$  $y$ -intercept:  $(0, 0)$ **Cube Root Function**

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

Domain:  $(-\infty, \infty)$ Range:  $(-\infty, \infty)$  $x$ -intercept:  $(0, 0)$  $y$ -intercept:  $(0, 0)$ 

### Absolute Value Function

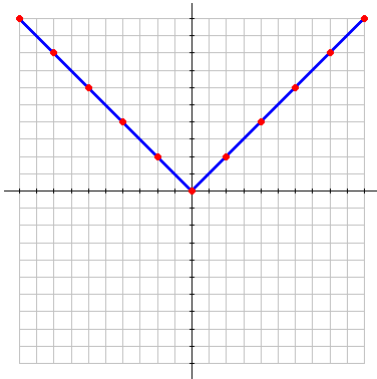
$$f(x) = |x|$$

Domain:  $(-\infty, \infty)$

Range:  $[0, \infty)$

x-intercept:  $(0, 0)$

y-intercept:  $(0, 0)$



### Greatest Integer Function

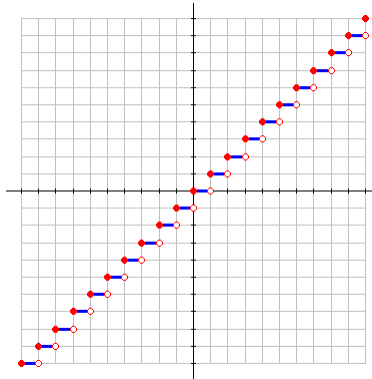
$$f(x) = [x]$$

Domain:  $(-\infty, \infty)$

Range:  $y \in \mathbb{Z}$

x-intercept: *many*

y-intercept:  $(0, 0)$



### Ceiling Function

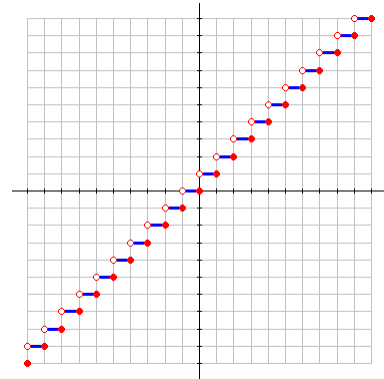
$$f(x) = \lceil x \rceil$$

Domain:  $(-\infty, \infty)$

Range:  $y \in \mathbb{Z}$

x-intercept: *many*

y-intercept:  $(0, 0)$



### Rational Function

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

Domain:  $(-\infty, 0) \cup (0, \infty)$

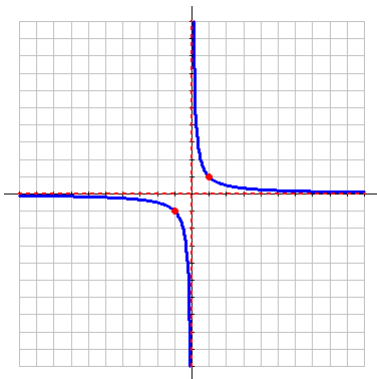
Range:  $(-\infty, 0) \cup (0, \infty)$

x-intercept: *none*

y-intercept: *none*

horizontal asymptote:  $y = 0$

vertical asymptote:  $x = 0$



### Exponential Function

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

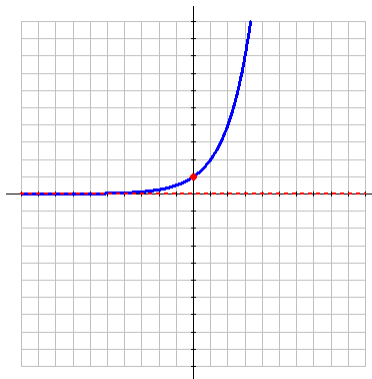
Domain:  $(-\infty, \infty)$

Range:  $(0, \infty)$

x-intercept: *none*

y-intercept:  $(0, 1)$

horizontal asymptote:  $y = 0$



### Logarithmic Function

$$f(x) = \log_b x, b > 1$$

Domain:  $(0, \infty)$

Range:  $(-\infty, \infty)$

x-intercept:  $(1, 0)$

y-intercept: *none*

vertical asymptote:  $x = 0$

