

Parent Functions and Graphs:

Quadratic
 $f(x) = x^2$

Cubic
 $f(x) = x^3$

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

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

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

$$f(x) = A(x+B)^2 + C$$

$$f(x) = A(x+B)^3 + C$$

$$f(x) = A|x+B| + C$$

$$f(x) = A\sqrt{x+B} + C$$

$$f(x) = A \cdot \frac{1}{x+B} + C$$

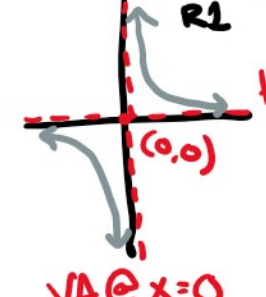
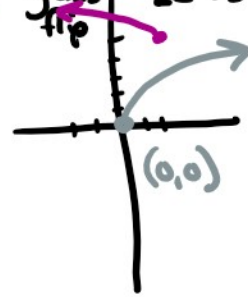
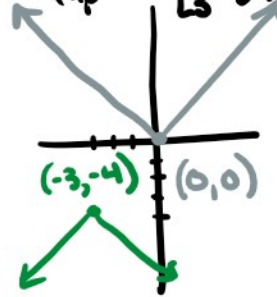
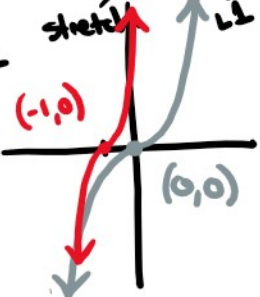
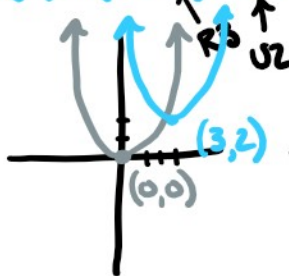
$$f(x) = (x-3)^2 + 2$$

$$f(x) = 2(x+1)^3$$

$$f(x) = -|x+3| - 4$$

$$f(x) = \sqrt{x+2} + 5$$

$$f(x) = \frac{1}{x-1} + 4$$



Positive B-values move graph LEFT
 Negative B-values move graph RIGHT

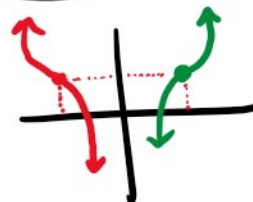
Positive C-values move graph UP
 Negative C-values move graph DOWN

Negative A-values up/down vertex flip

$A > 1$ vertical stretch

$0 < A < 1$ vertical squish (fraction)

Negative x-variable y-axis flip



Trigonometry:

$$\sin\left(\frac{7\pi}{6}\right) = \underline{-\frac{1}{2}}$$

radian
-0.5

$$\sec(-210^\circ) = \underline{-\frac{2\sqrt{3}}{3}}$$

degree
↘ $\frac{1}{\cos(-210)} = -1.15$

$$\cos(90^\circ) = \underline{0}$$

degree

Reciprocal

$\sin \rightarrow \csc$

$\cos \rightarrow \sec$

$\tan \rightarrow \cot$

Possible Solutions:

$0, \frac{1}{2}, \frac{\sqrt{2}}{2}, \frac{\sqrt{3}}{2}, \sqrt{3}, \frac{\sqrt{3}}{3}, 1$

$-\frac{1}{2}, -\frac{\sqrt{2}}{2}, -\frac{\sqrt{3}}{2}, -\sqrt{3}, -\frac{\sqrt{3}}{3}, -1$

$2, \sqrt{2}, \frac{2\sqrt{3}}{3}$

$-2, -\sqrt{2}, -\frac{2\sqrt{3}}{3}$