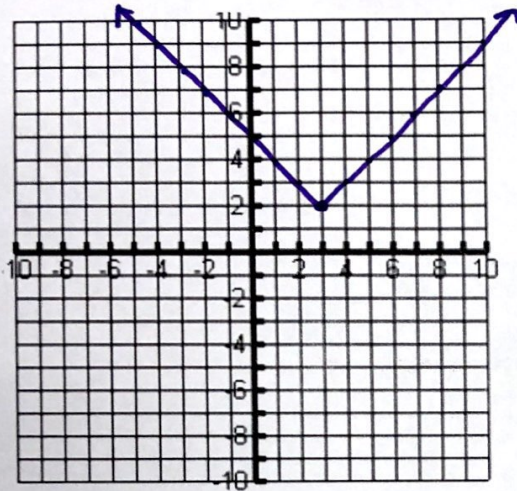


1-4 Homework

Absolute Value Functions

Graph the following absolute value functions. Identify the vertex as well as the domain and range of each function.

$$y = |x - 3| + 2$$

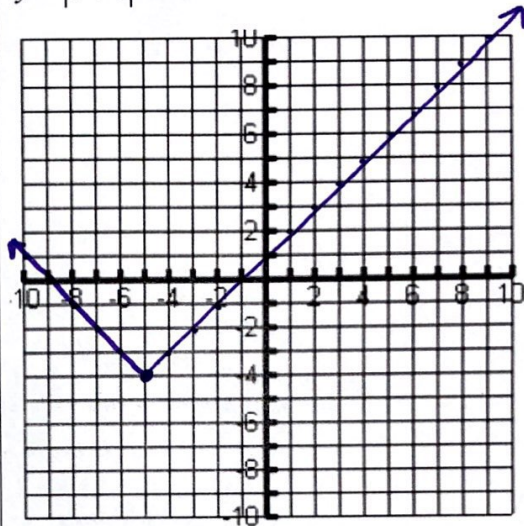


Vertex: (3, 2)

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

Range: $[2, \infty)$

$$y = |x + 5| - 4$$

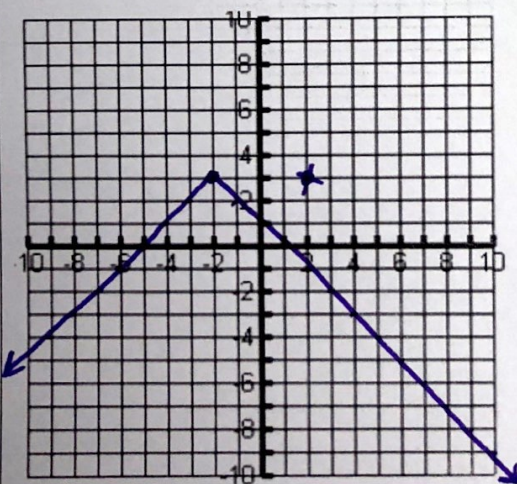


Vertex: (-5, -4)

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

Range: $[-4, \infty)$

$$y = -|x + 2| + 3$$

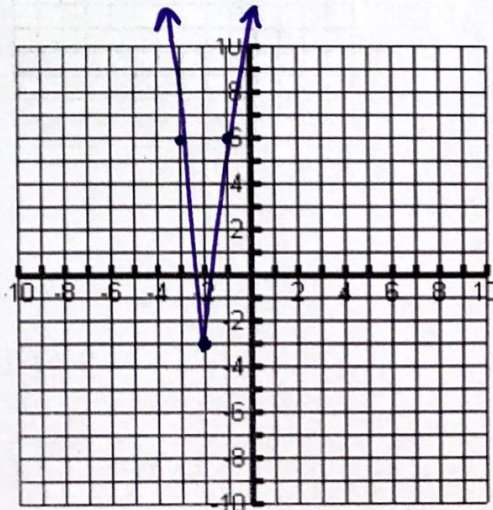


Vertex: (-2, 3)

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

Range: $(-\infty, 3]$

$$y = 3|3x + 6| - 3$$



Vertex: (-2, -3)

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

Range: $[-3, \infty)$

Given the following functions, state the transformations from the absolute value parent function.

$y = x - 2 + 4$	Right 2, up 4
$y = x + 2 - 4$	Left 2, down 4
$y = - x - 6$	Reflect over x-axis, down 6
$y = 4 x + 6 - 3$	Slope of 4, left 6, down 3
$y = \frac{1}{3} x - 7 + 8$	Slope of $\frac{1}{3}$, right 7, up 8
$y = -4 x + 8 - 1$	reflect over x-axis, slope of 4, left 8, down 1

Transformation Review: For each of the following functions, state the parent function following by the type of transformation that has occurred. Please record your responses in the indicated boxes.

Function	Parent Function	Transformation
$y = x + 4$	Linear $y = x$	up 4
$y = -(x - 2)^2 + 6$	Quadratic $y = x^2$	Reflect over x-axis Right 2, up 6
$y = \frac{1}{2}(x + 2)^3 - 6$	Cubic $y = x^3$	Vertical stretch of $\frac{1}{2}$, right left 2, down 6
$y = 2\sqrt{x - 4} + 6$	Square root $y = \sqrt{x}$	vertical stretch of 2, right 4, up 6
$y = \sqrt[3]{x} + 7$	Cube root $y = \sqrt[3]{x}$	up 7
$y = \frac{1}{x} - 8$	radical $y = \frac{1}{x}$	Down 8