

W-up: Write the equation of a line in point-slope form which contains the point (-5, 2) with a slope of -1/3

Parent Functions to Know

Linear	$y = x$
Quadratic	$y = x^2$
Cubic	$y = x^3$
Absolute Value	$y = x $
Cusp	$y = x^{2/3}$
Square Root	$y = \sqrt{x}$
Cube Root	$y = \sqrt[3]{x}$
Greatest Integer	$y = [x]$
Hyperbola	$y = \frac{1}{x}$
Inverse Square	$y = \frac{1}{x^2}$
Semi-Circle	$y = \sqrt{4 - x^2}$

Sketching Graphs

- 1) Go to the translated starting spot using values that are added/subtracted from the x and y values
- 2) Graph the parent function from this spot by picking values for x .

Ex) Graph each function

A) $y = 2\sqrt{x-3} + 1$

B) $y = -3|x+1| - 2$

C) $y = \frac{2}{x-1} - 4$

Graphing Piece-wise Functions

$$f(x) = \begin{cases} x^2 + 1, & x \leq 0 \\ 2x - 1, & x > 0 \end{cases}$$

- 1) Use the x -value from the restricted domain at the “break off point” and evaluate to find the open and closed dot(point) on the graph.
Note: Points should be directly above one another.
- 2) Graph the remaining pieces using x -values in the domain of each part and your knowledge of the parent functions.