

Piecewise Functions

Objective: To Evaluate and graph piece-wise functions with linear functions.

Learning Goals:

- 1.) I can evaluate piecewise functions given a domain value.
- 2.) I can graph a piecewise function using x-y tables.

Let's learn how to read and evaluate *piecewise* functions...

$$f(x) = \begin{cases} 2x - 1 & \text{if } x \leq -1 \\ 2x^2 + 3 & \text{if } -1 < x \leq 3 \\ -\frac{1}{3}x - 2 & \text{if } x > 3 \end{cases}$$

$$g(x) = \begin{cases} 2, & x < -2 \\ x^3 - 5, & -2 \leq x < 5 \\ x, & x \geq 5 \end{cases}$$

$f(1) =$

$g(-4) =$

$f(6) =$

$g(-1) =$

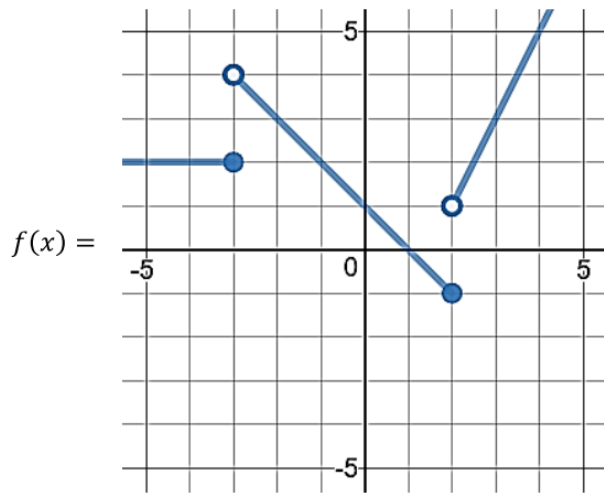
* $f(3) =$

* $g(-2) =$

* $f(-1) =$

* $g(5) =$

When piecewise functions are graphed, they look like multiple *pieces*. We know that the piecewise graph shown below *is* a function because it _____!



$f(3) =$

$f(-3) =$

$f(0) =$

$f(2) =$

$f(-127) =$

* The piecewise function above is shown to the right. Try finding the function values you found above. Did you get the same answers?

$$f(x) = \begin{cases} 2 & x \leq -3 \\ -x + 1 & -3 < x \leq 2 \\ 2x - 3 & x > 2 \end{cases}$$

