

## 2-3 Piecewise Functions

### Objectives:

2.3a: I can graph a piecewise function

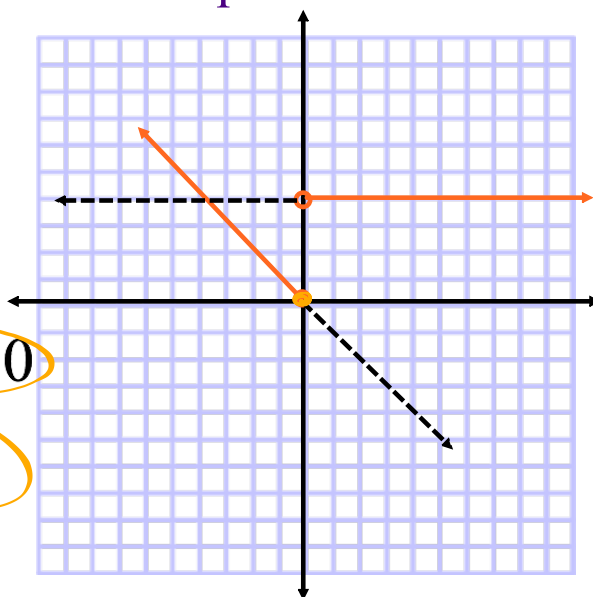
2.3b: I can write the equation of a piecewise function

Aug 12-7:52 PM

A piecewise function is a function with different equations defined over unique intervals of  $x$ .

For example:

$$f(x) = \begin{cases} -x, & x \leq 0 \\ 4, & x > 0 \end{cases}$$

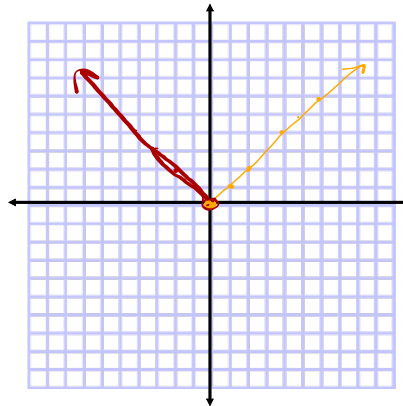


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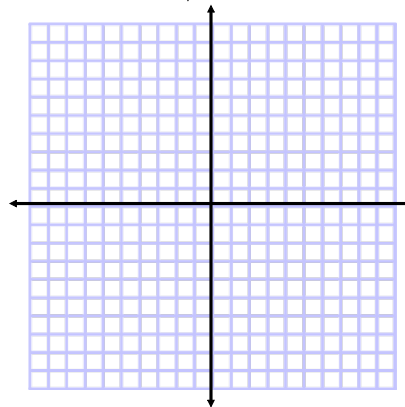
Graph the following:

$$f(x) = \begin{cases} x & \text{if } x \geq 0 \\ -x & \text{if } x < 0 \end{cases}$$

$f(x) = x$



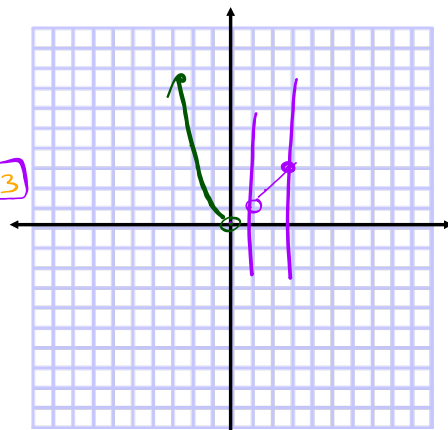
$$f(x) = \begin{cases} x^3, & x < -1 \\ 2^x, & x > 0 \end{cases}$$



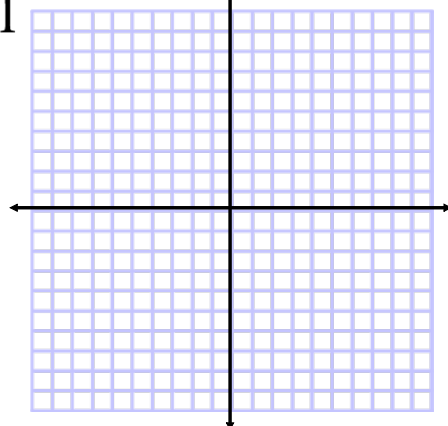
Aug 12-8:05 PM

Graph.

$$f(x) = \begin{cases} x^2, & x < 0 \\ x, & 1 < x \leq 3 \end{cases}$$



$$f(x) = \begin{cases} x^2, & x \geq 0 \\ x^3, & x \leq -1 \\ x, & x > 4 \end{cases}$$



Jul 27-10:38 AM

Graph.

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

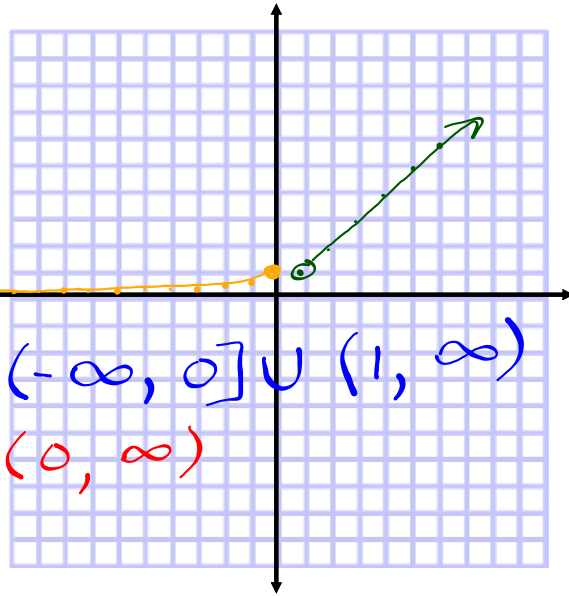
$$1 \cdot 2^0 = 1$$

$$2^1 = 2$$

$$2^{-1} = \frac{1}{2}$$

$$\text{Dom: } (-\infty, 0] \cup (1, \infty)$$

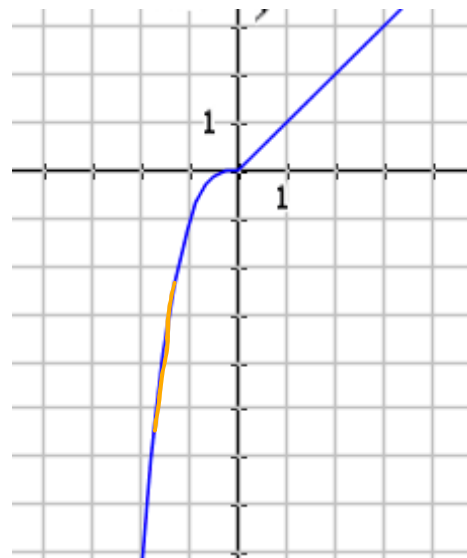
$$\text{Ran: } (0, \infty)$$



Aug 13-8:48 AM

Write the equation for the following piecewise functions

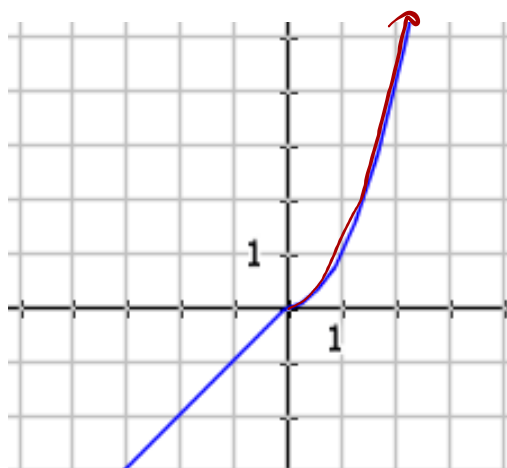
$$f(x) = \begin{cases} x^3, & x < 0 \\ x, & x \geq 0 \end{cases}$$



Aug 12-8:09 PM

Write the equation for the following piecewise functions.

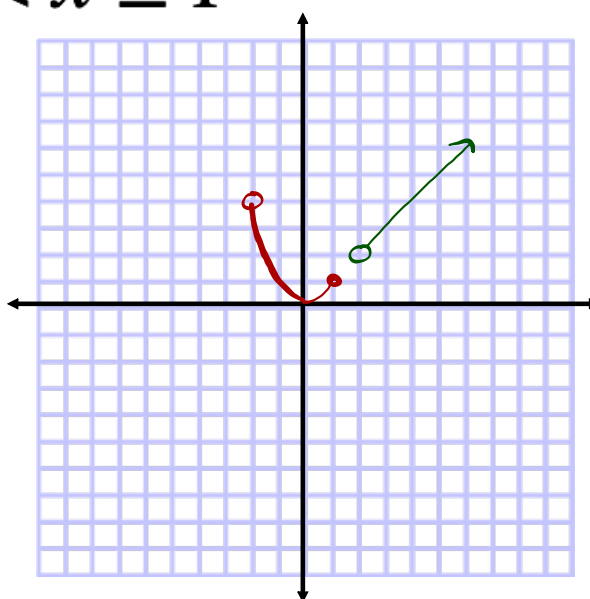
$$f(x) = \begin{cases} x, & x < 0 \\ x^2, & x \geq 0 \end{cases}$$



Aug 13-9:05 AM

Graph

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



Sep 17-9:59 AM

