

2-3 Piecewise Functions

Objectives:

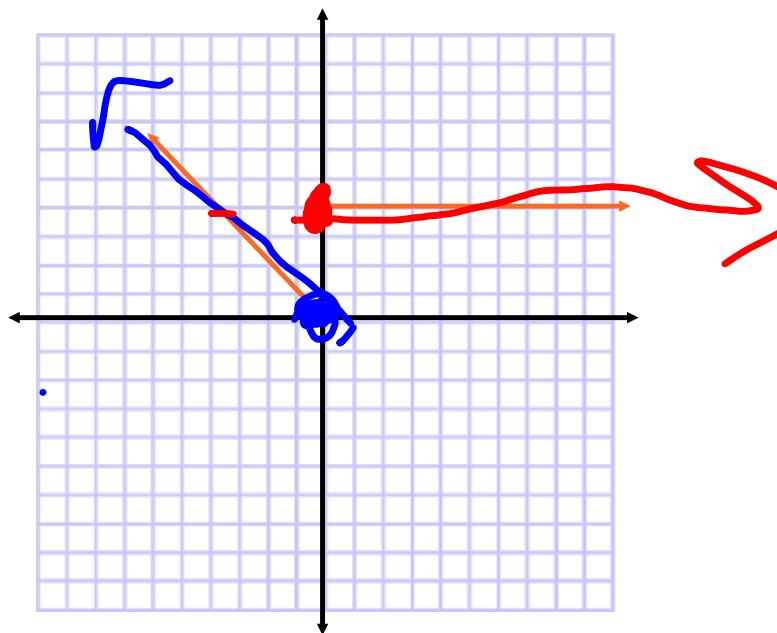
2.3a: I can graph a piecewise function

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

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

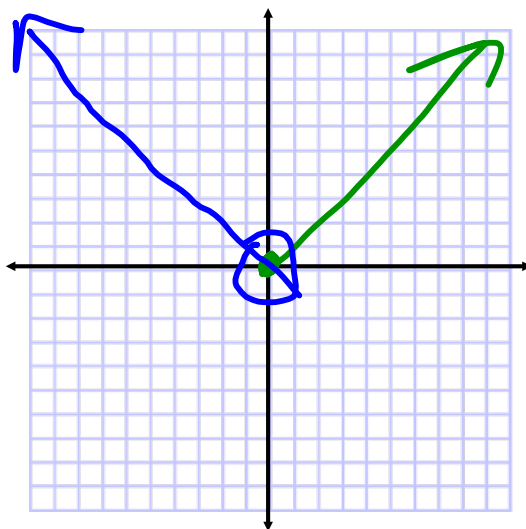
For example:

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

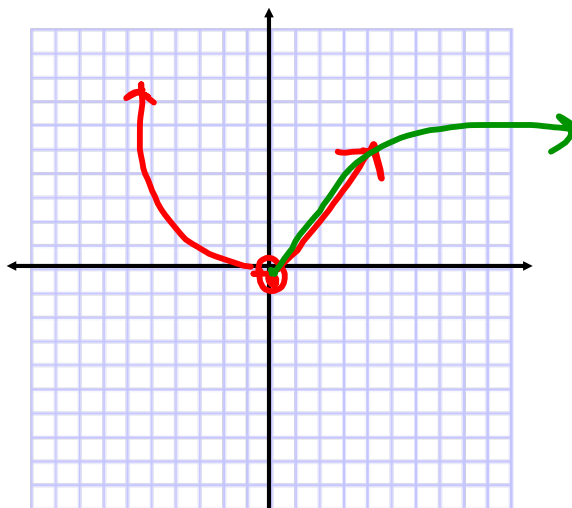


Graph the following:

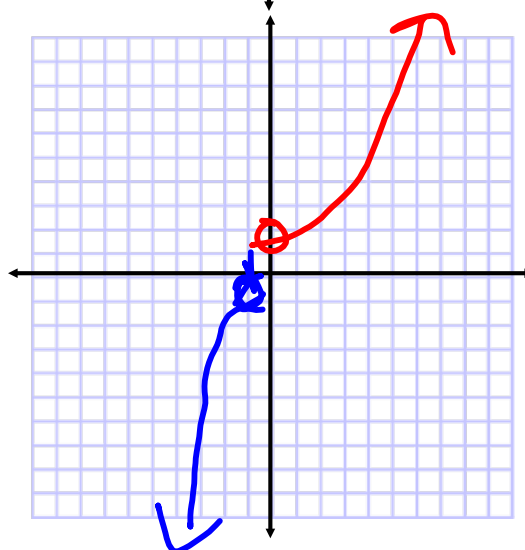
$$f(x) = \begin{cases} x & \text{if } x \geq 0 \\ -x & \text{if } x < 0 \end{cases}$$



$$f(x) = \begin{cases} x^2 & \text{if } x \leq 0 \\ \sqrt{x} & \text{if } x > 0 \end{cases}$$

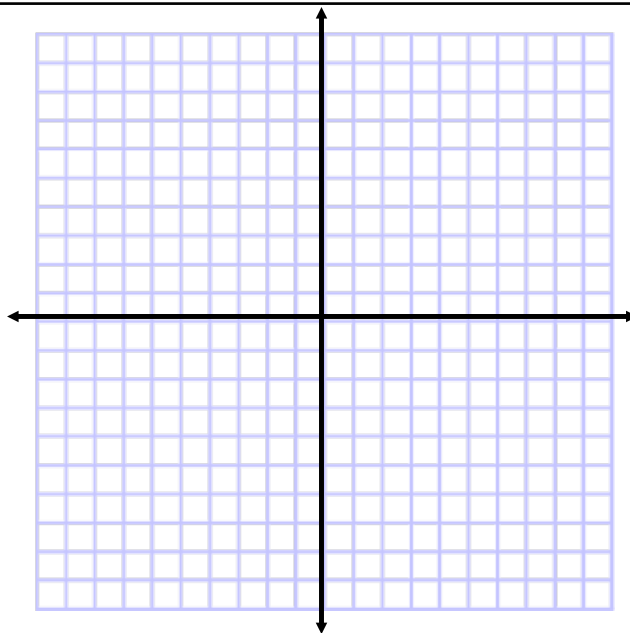


$$f(x) = \begin{cases} x^3, & x < -1 \\ 2^x, & x > 0 \end{cases}$$

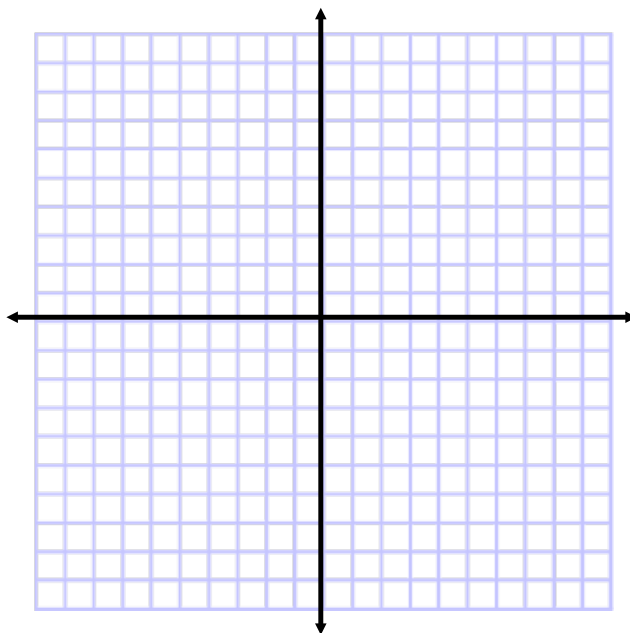


Graph.

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

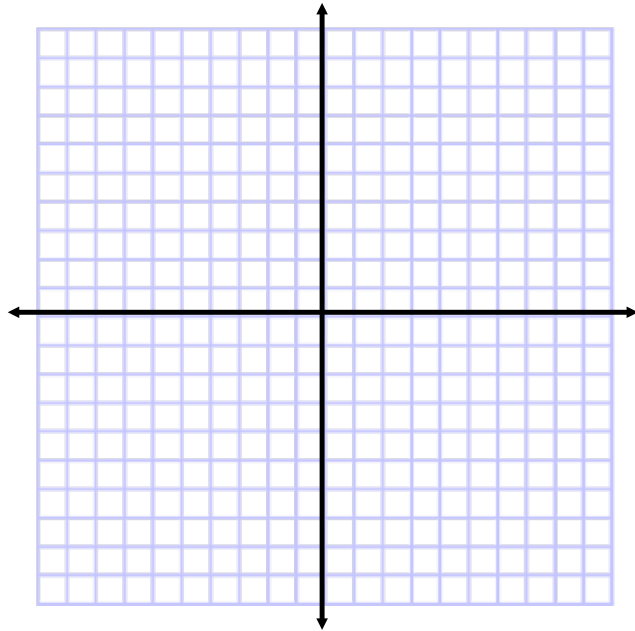


$$f(x) = \begin{cases} x^2, & x \leq -1 \\ \sqrt{x}, & x > 4 \end{cases}$$



Graph.

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



Write the equation for the following piecewise functions

