

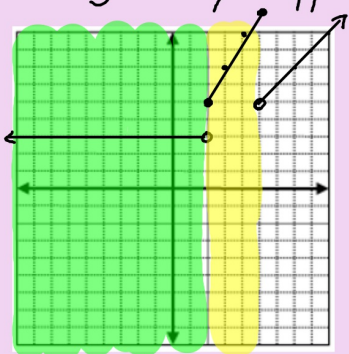
A Piecewise Function is a function which splits its domain into several intervals, using different calculations for each interval. Examine the inequalities in the definition of the function to determine how much of each piece to include.

Let $f(x) = \begin{cases} 3 & x < 2 \\ 2x+1 & 2 \leq x \leq 5 \\ x & x > 5 \end{cases}$ Find a) $f(-6)$ b) $f(2)$ c) $f(3)$ d) $f(5)$ e) $f(7.1)$

3 5 7 11 7.1

The graph of the piecewise function is made by drawing the graph for each separate formula, but only for the domain which the formula is used. This means we only use a pieces (from left to right) of the entire graph of each formula.

Graph the function above.



Part I. Carefully graph each of the following. Identify whether or not the graph is a function. Then, evaluate the graph at any specified domain value. You may use your calculators to help you graph, but you must sketch it carefully on the grid!

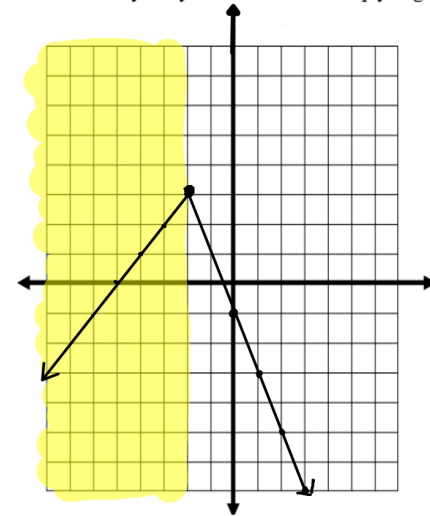
1. $f(x) = \begin{cases} x+5 & x < -2 \\ -2x-1 & x \geq -2 \end{cases}$

Function? Yes or No

$f(3) = -7$

$f(-4) = 1$

$f(-2) = 3$



Part I. Carefully graph each of the following. Identify whether or not the graph is a function. Then, evaluate the graph at any specified domain value. You may use your calculators to help you graph, but you must sketch it carefully on the grid!

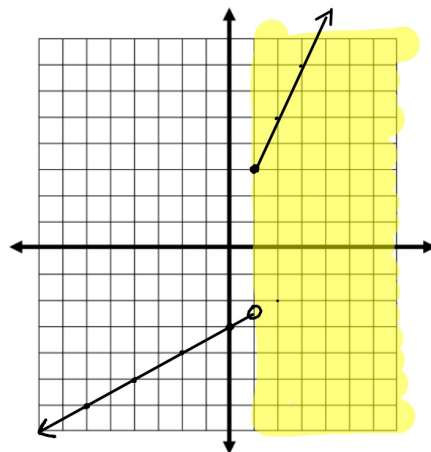
2. $f(x) = \begin{cases} 2x+1 & x \geq 1 \\ \frac{x}{2}-3 & x < 1 \end{cases}$

Function? Yes or No

$f(-2) = -4$

$f(6) = 13$

$f(1) = 3$



Part I. Carefully graph each of the following. Identify whether or not the graph is a function. Then, evaluate the graph at any specified domain value. You may use your calculators to help you graph, but you must sketch it carefully on the grid!

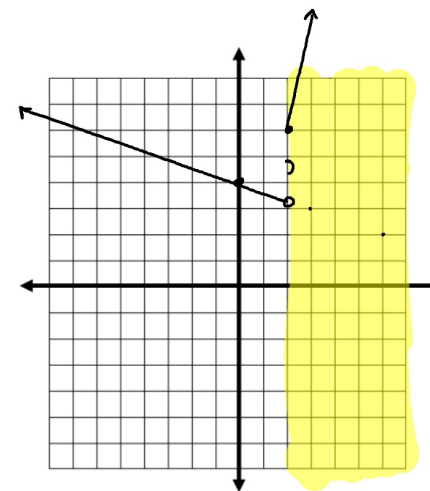
3. $f(x) = \begin{cases} 4x-2 & x \geq 2 \\ -\frac{x}{3}+4 & x < 2 \end{cases}$

Function? Yes or No

$f(-4) = 5\frac{1}{3}$

$f(8) = 30$

$f(2) = 6$



Part I. Carefully graph each of the following. Identify whether or not the graph is a function. Then, evaluate the graph at any specified domain value. You may use your calculators to help you graph, but you must sketch it carefully on the grid!

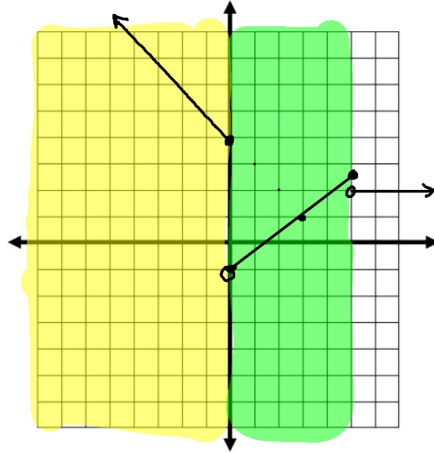
$$4. \begin{cases} -x+4 & x \leq 0 \\ \frac{2x}{3}-1 & 0 < x \leq 5 \\ 2 & x > 5 \end{cases}$$

Function? Yes or No

$$f(-2) = 6$$

$$f(0) = 4$$

$$f(5) = 2\frac{1}{3}$$



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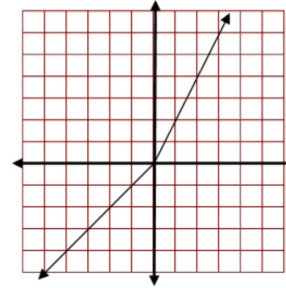
Homework:

5, 6, 9, 10

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Part II. Write equations for the piecewise functions whose graphs are shown below. Assume that the units are 1 for every tic mark.

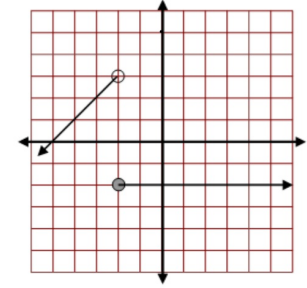
7.



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

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8.



$$f(x) = \begin{cases} x+5 & x < -2 \\ -2 & x \geq -2 \end{cases}$$