

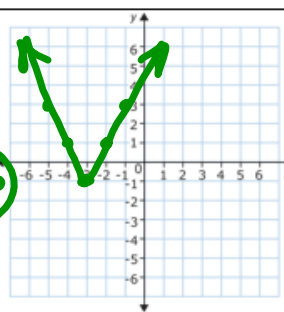
Bell Ringer

2 min

Tuesday 8/271) Graph the following function: $f(x) = 2|x + 3| - 1$

2) Identify the domain and range of the function:

D: ^{all real} #s $R: [-1, \infty)$
 $(-\infty, \infty)$ $y \geq -1$



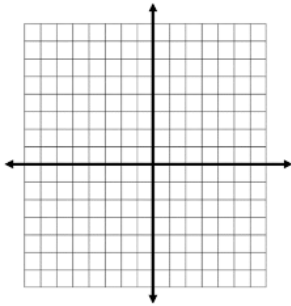
due tomorrow - questions?

Intro to Piecewise Functions Worksheet

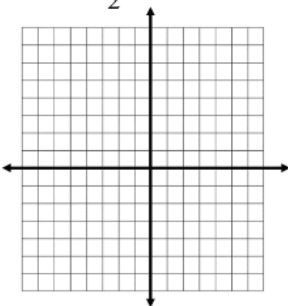
Name: _____ Hr: _____

Graph the following functions with their restricted domains.

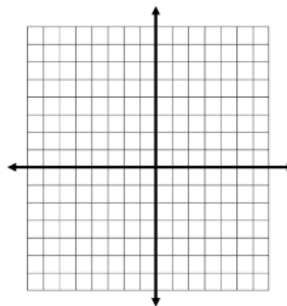
1. $y = 2x + 1, x \leq 3$



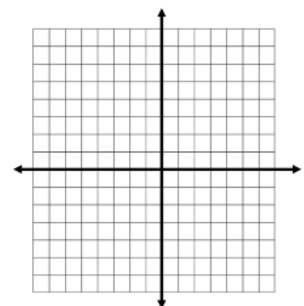
2. $y = -\frac{1}{2}x + 3, x > 4$



3. $y = |x + 2|, -4 \leq x \leq 2$

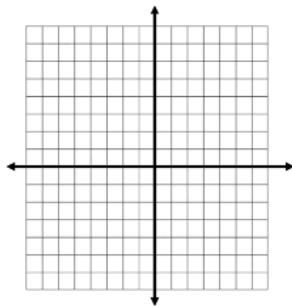


4. $y = 5, -1 < x < 4$

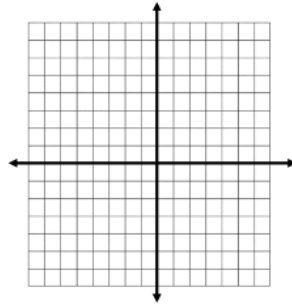


Graph the following piecewise functions.

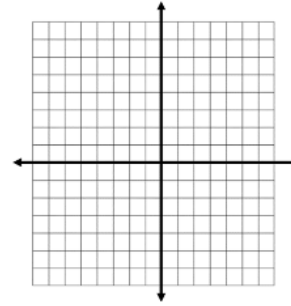
5. $f(x) = \begin{cases} -2x + 1 & x \leq 2 \\ |x - 4| & x > 2 \end{cases}$



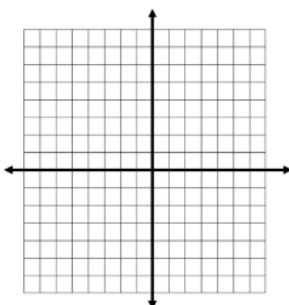
6. $f(x) = \begin{cases} 5 & x \leq -3 \\ -2x - 3 & x > -3 \end{cases}$



7. $f(x) = \begin{cases} 2x + 3, & x < -1 \\ |x| - 5, & -1 \leq x < 2 \\ 1, & x \geq 3 \end{cases}$

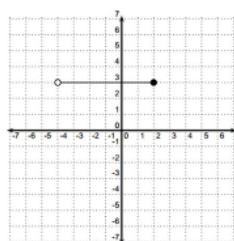


8. $f(x) = \begin{cases} x + 1, & x \leq 0 \\ 2x - 1, & 0 < x \leq 4 \\ 3, & x > 4 \end{cases}$

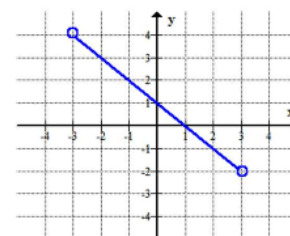


Write an equation with its restricted domain for each graph

9.



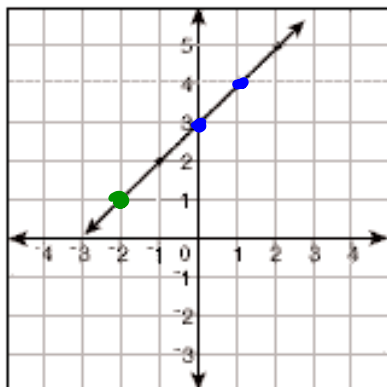
10.



Pick up a white board, marker, and eraser
from the front table

Evaluating a function...

$$f(x) = x + 3$$



$$f(-2) = 1 \quad (-2, 1)$$

$$f(0) = 3 \quad (0, 3)$$

$$f(1) = 4 \quad (1, 4)$$

$$f(5) = 8 \quad (5, 8)$$

$$f(-10) = -7 \quad (-10, -7)$$

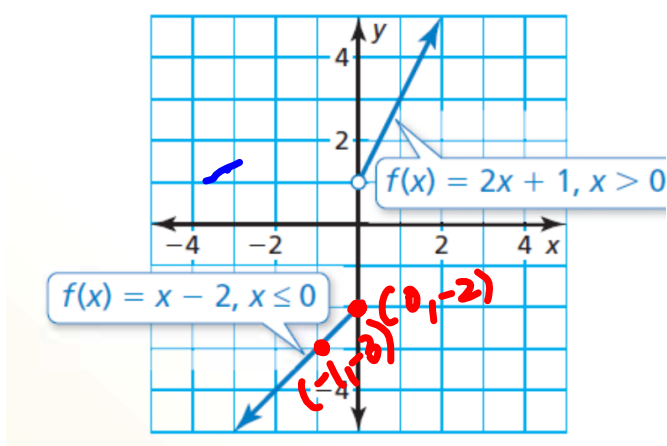
Evaluating a piecewise function...
 Evaluate $f(x)$ when $x = -1, 0$ and 2

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

$$f(-1) = -3 \quad (-1, -3)$$

$$f(0) = -2 \quad (0, -2)$$

$$f(4) = 9$$



Evaluate the function:

$$f(x) = \begin{cases} \cancel{3}, & \text{if } \cancel{x} < -2 \\ \boxed{x + 2}, & \text{if } -2 \leq x \leq 5 \\ 4x, & \text{if } x > 5 \end{cases}$$

$$f(0) = 2 \quad (0, 2)$$

Evaluate the function:

$$f(x) = \begin{cases} 3, & \text{if } x < -2 \\ x + 2, & \text{if } -2 \leq x \leq 5 \\ 4x, & \text{if } x > 5 \end{cases}$$

$$f(6) = 24 \quad 4(6)$$

$(6, 24)$


Evaluate the function:

$$f(x) = \begin{cases} \cancel{3}, & \text{if } x < \cancel{2} \\ \cancel{5}x + 2, & \text{if } -2 \leq \cancel{5} \leq 5 \\ \cancel{4x}, & \text{if } x > \cancel{5} \end{cases}$$

$$f(5) = 7$$

$$(5, 7)$$

Evaluate the function:


$$f(x) = \begin{cases} 3, & \text{if } x < -2 \\ x + 2, & \text{if } -2 \leq x \leq 5 \\ 4x, & \text{if } x > 5 \end{cases}$$

$$f(-4) = 3$$

Evaluate the function:

$$f(x) = \begin{cases} 3, & \text{if } x < -2 \\ x + 2, & \text{if } -2 \leq x \leq 5 \\ 4x, & \text{if } x > 5 \end{cases}$$

$$f(10) = 40$$

Evaluate the function:

$$f(x) = \begin{cases} 3, & \text{if } x < -2 \\ x + 2, & \text{if } -2 \leq x \leq 5 \\ 4x, & \text{if } x > 5 \end{cases}$$

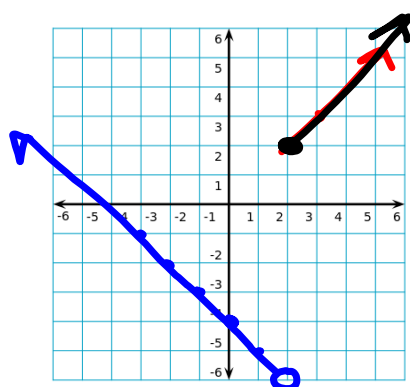
$$f(3) = 5$$
$$(3, 5)$$

Evaluate the function:

$$f(x) = \begin{cases} 3, & \text{if } x < -2 \\ x + 2, & \text{if } -2 \leq x \leq 5 \\ 4x, & \text{if } x > 5 \end{cases}$$

$$f(-100) = (-100, 3)$$

$$\text{Graph } y = \begin{cases} -x - 4, & \text{if } x < 2 \\ |x|, & \text{if } x \geq 2 \end{cases}$$



Describe the domain and range.

$$D: (-\infty, \infty)$$

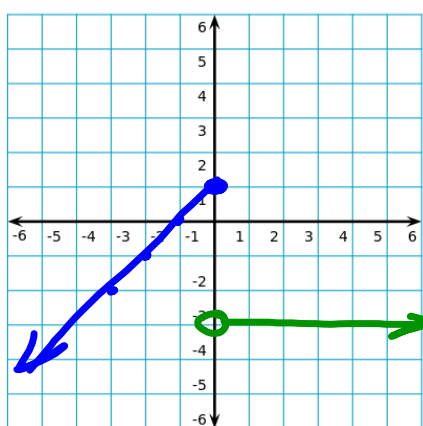
$$R: (-6, \infty)$$

$$f(2) = 2$$

Graph the function. Describe the domain and range.

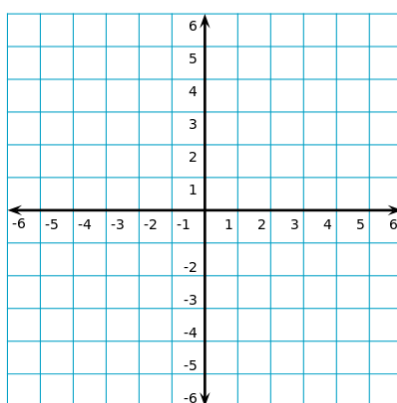
$$y = \begin{cases} x + 1, & \text{if } x \leq 0 \\ \underline{-3}, & \text{if } x > 0 \end{cases}$$

D: all real #s
 $(-\infty, \infty)$
R: $(-\infty, 1]$



Graph the function. Describe the domain and range.

$$y = \begin{cases} x - 2, & \text{if } x < 0 \\ 4x, & \text{if } x \geq 0 \end{cases}$$



D:

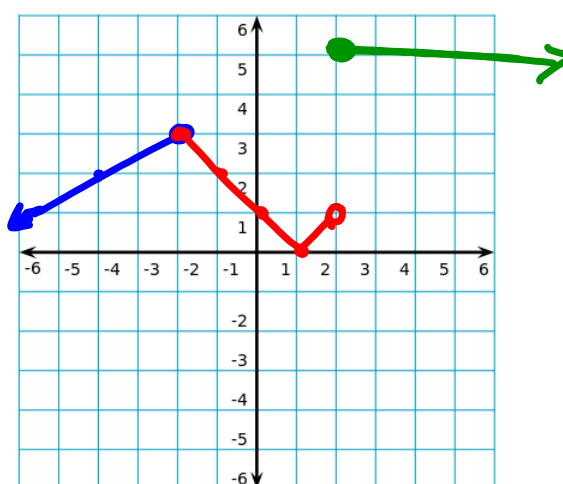
R:

Graph the function. Describe the domain and range.

$$f(x) = \begin{cases} \frac{1}{2}x + 4, & x < -2 \\ |x - 1|, & -2 \leq x < 2 \\ 5, & x \geq 2 \end{cases}$$

$$D: (-\infty, \infty)$$

$$R: (-\infty, 3], [5, \infty)$$



3

.

Assignment

1.2 Piecewise Functions Day 1: graphing, evaluating, and domain & range

2, 3-21 odd, 22, 31, 49, 51, 59, and 61

