

Welcome to Class!!

You will need:

- ~ Pencil
- ~ Highlighter
- ~ Ruler
- ~ Binder
- ~ Vocabulary Sheet

Homework:

Handout 1.4 Piecewise Functions

Stick Quiz

8/29/18

1) Find the equation of the line that is perpendicular to $y = 2x - 2$ and passes through $(-4, 1)$.

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

$$y = mx + b$$

$$1 = -\frac{1}{2}(-4) + b$$

$$1 = 2 + b$$

$$-1 = b$$

$$y = -\frac{1}{2}x - 1$$

Graphing Examples

$$1) \underline{7x} - \underline{5y} = -35$$

X-int (where $y=0$)

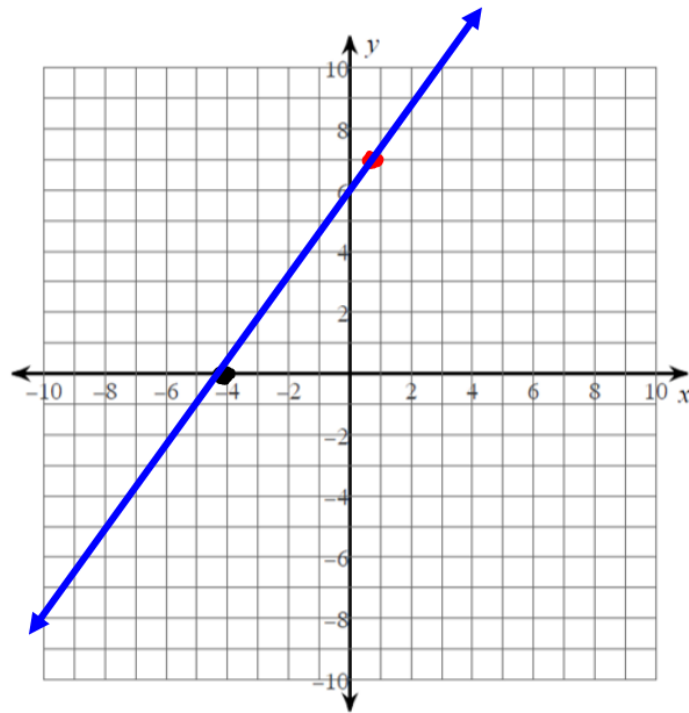
$$\frac{7x}{7} = \frac{-35}{7}$$

$$x = -5$$

y-int (where $x=0$)

$$\frac{-5y}{-5} = \frac{-35}{-5}$$

$$y = 7$$



$$y = -2x - 8$$
$$+2x \quad +2x$$
$$+2x + y = -8$$

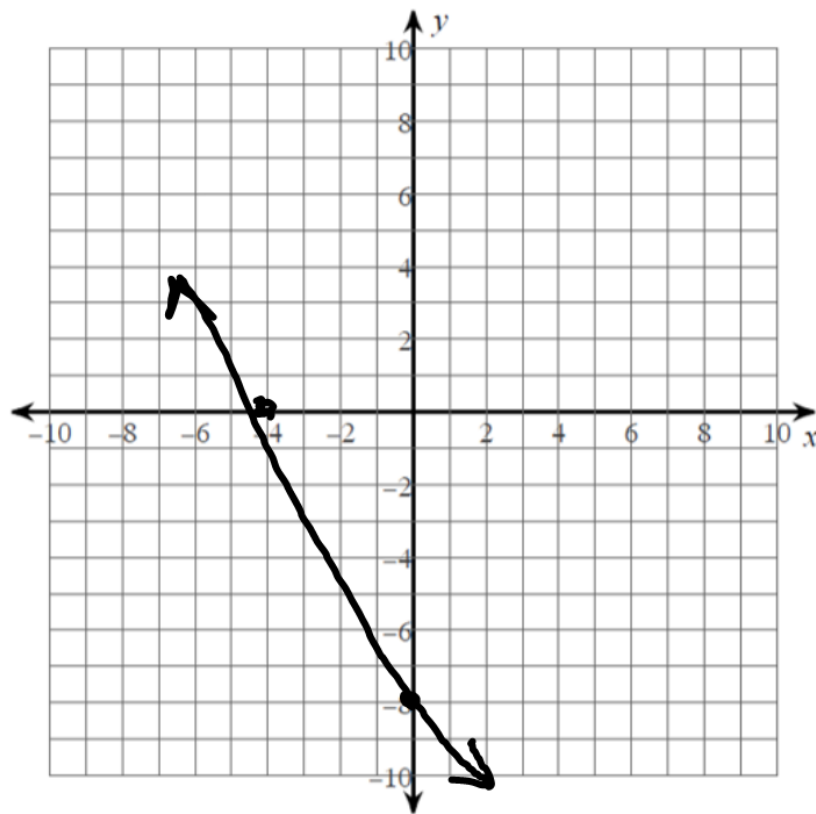
x-int

$$+2x = -8$$

$$x = -4$$

y-int

$$y = -8$$



Example - Application

8) Crystal^{babysitting} charges a flat fee of \$5, plus \$6 per hour.

a) Write an equation to represent this situation.

$$y = 6x + 5$$

b) What do you think the slope and the y-intercept represent?

The slope represents her charging \$6 per hour.
The y-intercept is her starting fee.

9) Suppose that the water level of a river is 34 feet and that it is receding at a rate of 0.5 foot per day.

a) Write an equation to represent this situation.

$$y = -.5x + 34$$



b) What do you think the slope and the y-intercept represent?

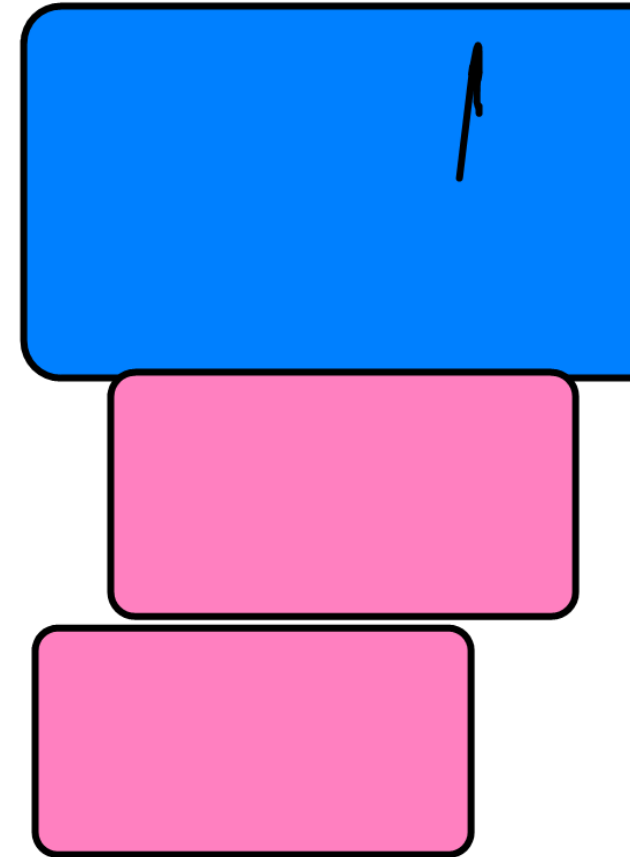
The slope is $-.5$ because the water is receding by $.5$ ft/day.

The y-intercept represents the starting depth of the water.

Unit 1.4: Piecewise Functions

Vocabulary:

<p>Piecewise function:</p>	<p>We can create functions that behave differently based on the input (x) value.</p>
	<p>Included \leq or \geq</p>
	<p>Unincluded $<$ or $>$ not = !</p>



Put on same page below today's **Stick Quiz**

Unit 1.4: Piecewise

Example #1

$$f(x) = -x + 2 \text{ if } x > 2$$

$$g(x) = 2x \text{ if } x < 2$$

Given $f(x) = -x + 2$ if $x > 2$ and $g(x) = 2x$ if $x < 2$ find each value.

a) $x = 5$

$$f(5) = -5 + 2 = \boxed{-3}$$

c) $x = 2$

Undefined

b) $x = -1$

$$g(-1) = 2(-1) = \boxed{-2}$$

d) $x = 3$

$$f(3) = -3 + 2 = \boxed{-1}$$

Example #2:

$$\text{Evaluate } f(x) = \begin{cases} 7x + 4 & \text{if } x \leq -4 \\ -2x & \text{if } -4 < x < 2 \\ 3 & \text{if } x \geq 2 \end{cases}$$

a) $f(10) = 3$

b) $f(0) = -2(0)$
 $f(0) = 0$

c) $f(-2) = -2(-2)$
 $= 4$

Now what?

Work on:

- Handout 1.4

Must be completed by:

- Thursday 8/30

If you finish early:

- Create and exchange your own piecewise functions

I can:

- 1) Evaluate piecewise functions
- 2) Graph piecewise functions