Slide 1

Do Now: Graph the equation.

1. $y = -8$ $(0, -8)$
2. $x = 5$ $(5, 0)$
3. $y = 0$ (x-axis)
4. $x = 0$ (y-axis)

$(5, 7)$
$(0, 5)$
$(-3, 0)$ $(1, 0)$ $(5, 0)$
$(3, 0)$
$(0, -8)$ $(5, -8)$
$(-4, -8)$

Slide 2

Slide 3 (20)

$y = \frac{3}{2}x + 1$

X	Y
-2	-2
-1	-0.5
0	1
1	2.5
2	4

(Yes)

$y = \frac{3}{2}(-2) + 1 = -3 + 1 = -2$
$y = \frac{3}{2}(-1) + 1 = -1.5 + 1$
$y = \frac{3}{2}(0) + 1$
$y = \frac{3}{2}(1) + 1 = 1.5 + 1$
$y = \frac{3}{2}(2) + 1 = 4$

Slide 4 (22)

$X = 3$

X	Y
3	4
3	7
3	5

(No)

Slide 5

$y = 2$

X	Y
4	2
7	2
6	2

Yes

Slide 6

8.2 Linear Equations in Two Variables

(continued Day 3)

8.F

- SWBAT find solutions of equations in two variables.
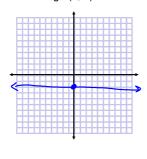- SWBAT create representations to communicate mathematical ideas.

Calculators: No

Horizontal and Vertical Lines

- Horizontal Lines
  y = b is the horizontal line through (0, b)
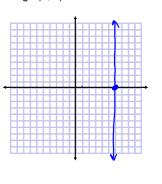
Ex.) y = -2

Is this a function?

Yes

- Vertical Lines
  x = a is the vertical line through (a, 0)

Ex.) x = 6

Is this a function?

No

Function	Not a function
(Pass the vertical line test)	
y = 3x - 1	x = 3
	(Fails the vertical line test)
$y = \frac{1}{2}x + 1$	
y = -x	
y = 3	

In general, a linear equation $\overset{(line)}{\text{equation}}$ is a function unless its graph is a vertical line.

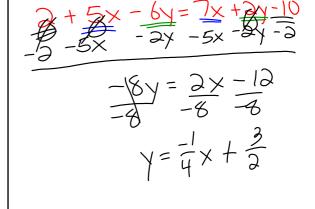An equation that is solved for y is in **function form**.

-Easier to graph

-Know as slope-intercept form (y = mx + b)

Write the equation in function form (slope-intercept form):

a.) x + 2y = 6 ← Not function form

$$x + 2y = 6$$
$$-x \quad -x$$

Function form
means $y = \underset{\sim\sim\sim}{\quad}$

$$2y = -x + 6$$
$$\frac{2y}{2} = \frac{-x}{2} + \frac{6}{2}$$

$$y = mx + b$$

Function Form $\boxed{y = \frac{-1}{2}x + 3}$

$$2 + 5x - 6y = 7x + 2y - 10$$
$$-2 \quad -5x \qquad -2x \quad -5x \quad -2y \quad -2$$

$$\overline{}$$

$$\frac{-8y}{-8} = \frac{2x}{-8} - \frac{12}{-8}$$

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

$2 + 5xy = 7x$

$$\frac{5xy}{5x} = \frac{7x}{5x} - \frac{2}{5x}$$

$$y = \frac{7}{5} - \frac{2}{5x}$$

---

b.) $-4x + 3y = -3$ *Not function form*

$\underline{+4x \qquad\qquad +4x}$

$$\frac{3y}{3} = \frac{4x}{3} - \frac{3}{3}$$

Function Form

$y = m \cdot x + b$

$$\boxed{y = \frac{4}{3}x - 1}$$

Exit Pass 8.2

Write the equation in function form. Then graph the equation.

$3x + 2y = -2$

"Don't blame the sea if you cannot catch a fish."

Working individually or with a partner, complete the workbook.

Workbook pg. 103 #~~~~~~~~~~~~~~~~~~~

① Rip out pg. 103

② Circle #13, 14, 15, 16

        #18, 19, 22   #18-23 (all)

Reflection of Today's Lesson

8.2 Linear Equations in Two Variables

8.F

• SWBAT find solutions of equations in two variables.
• SWBAT create representations to communicate mathematical ideas.

Calculators: No

Homework

pg. 394 #19, 21, 24-30 evens