

Warm Up

10/4

Linear or not?

- If not linear, provide evidence to support your claim.

* If linear, write the equation.

there is a constant slope between all pants

	x	y		
+3 <	15	20	> -6	$\frac{\Delta y}{\Delta x} = \frac{-6}{3} = -2$
+6 <	18	14	> -12	$\frac{\Delta y}{\Delta x} = \frac{-12}{6} = -2$
+12 <	24	2	> -24	$\frac{\Delta y}{\Delta x} = \frac{-24}{12} = -2$
	36	-22		

Constant slope between ALL pants means

LINEAR

you can also show it's linear like this:

$$\frac{\Delta y}{\Delta x} = \frac{-6}{3} = \frac{-12}{6} = \frac{-24}{12} = -2$$

^x ^y
(15, 20)

$$y = -2x + b$$

$$20 = -2(15) + b$$

$$20 = -30 + b$$

$$\begin{array}{r} +30 \\ +30 \\ \hline \end{array}$$

$$50 = b$$

$$y = -2x + 50$$

Linear or not?

- If not linear, provide evidence to support your claim.
- If linear, write the equation.

	x	y		
+5 <	2	2	> +12	$\frac{\Delta y}{\Delta x} = \frac{12}{5}$
+3 <	7	14	> +9	$\frac{\Delta y}{\Delta x} = \frac{9}{3} = 3$
+4 <	10	23	> +10	$\frac{\Delta y}{\Delta x} = \frac{10}{4} = \frac{5}{2}$
	14	33		

Not linear because slope is not constant between all points.

$$\frac{\Delta y}{\Delta x} = \frac{12}{5} \neq 3 \neq \frac{5}{2}$$

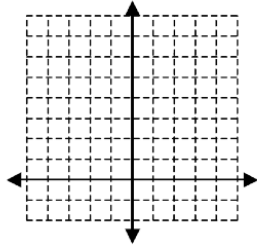
Name _____

Homework Questions?

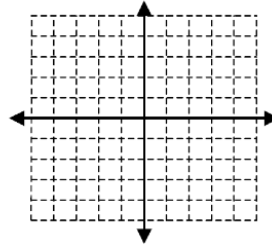
Writing Equations of Lines Practice

Graph the line that passes through the points. Then write the equation of the line in slope-intercept form.

1. (1, 8) and (-2, -1)



2. (-4, -1) and (2, 2)



Use the slope formula to find the slope of the line between the given points.

3. (-4, 1) and (2, -5)

4. (2, -3) and (-3, 7)

Write the equation in slope-intercept form for the line with the given slope that contains the given point.

5. slope = 1; (-2, 3)

6. slope = -3; (-1, 6)

Write the equation of the line in slope-intercept form that passes through the given points.

7. (0, -5) and (3, 4)

8. (2, 4) and (1, -2)

9. (2, -2) and (-4, 1)

10. (4, 3) and (-8, 0)

11. (9, -2) and (-3, 2)

12. (-3, -3) and (7, 2)

13. (1, 2) and (7, 2)

14. (5, -6) and (5, -3)

13. (1, 2) and (7, 2)

14. (5, -6) and (5, -3)

#13 (1, 2) (7, 2)

$$+b < \begin{matrix} 1, 2 \\ 7, 2 \end{matrix} > +0 \quad \frac{\Delta y}{\Delta x} = \frac{0}{6} = 0$$

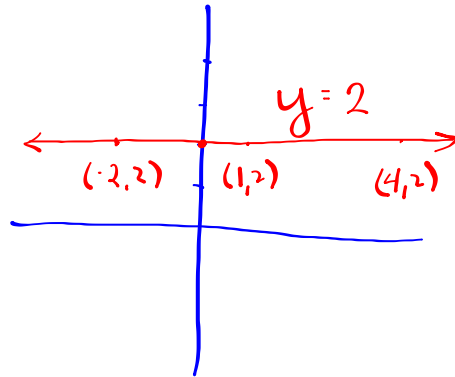
$$y = mx + b$$

$$y = 0(x) + b$$

$$2 = 0(1) + b$$

$$2 = b$$

$$y = 2$$



y is always = 2, no matter what x is

#14 (5, -6) (5, -3)

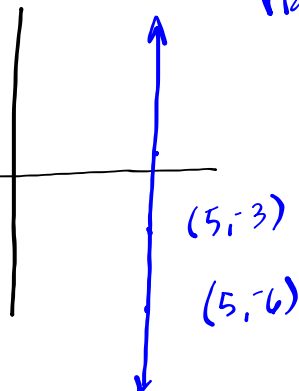
$$+0 < \begin{matrix} 5, -6 \\ 5, -3 \end{matrix} > +3$$

$$\frac{\Delta y}{\Delta x} = \frac{3}{0}$$

undefined no slope

no movement left or right

$x = 5$
value of
 x is always 5



Classwork

Is the relationship shown by the data linear? If it is, model the data with an equation.

15.

x	y
2	3
3	7
4	11
5	15

16.

x	y
-3	4
-1	6
1	7
3	10

17.

x	y
-2	5
3	-5
7	-13
11	-21

18.

x	y
2	3
5	18
8	33
14	63

19.

x	y
-2	25
0	19
3	10
7	-2

20.

x	y
2	3
3	10
4	17
10	24

Homework

Finish classwork