Created by Mr. Lischwe

Warmup 10/ $\left(\frac{5000 \cdot 3}{2 \cdot 500}\right)$

1) Create a new goal for this 9 weeks. The goal should pertain to this math class. **Write your goal on your slip of paper AND on your warmup page.** A volunteer will tape them up. Put your name on the back if you want. Your goal should be:
   - **Specific**
   - **Hard enough that you'll be proud if you reach it**
   - **Not too hard that it's unreachable**

2) On your warmup page, write down some specific actions/habits/mindsets you will need to develop or maintain this 9 weeks to reach your new goal.

Go over 1st 9 Weeks Review

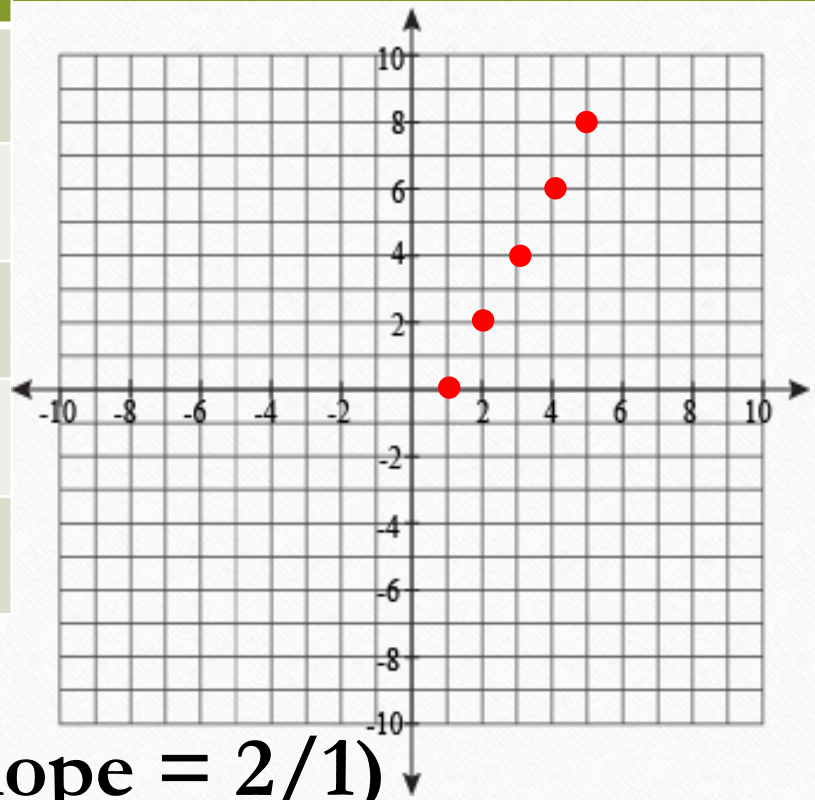
Reminder:

- **Retake MUST be done tomorrow!!!**
- **TODAY: Lunch study session**
- **Extra practice must be done by tomorrow! Or better yet, today, and I can check it/help you with it!**
- **TOMORROW: Retake during Physical Activity and/or lunch and/or PLT**

Table of Contents

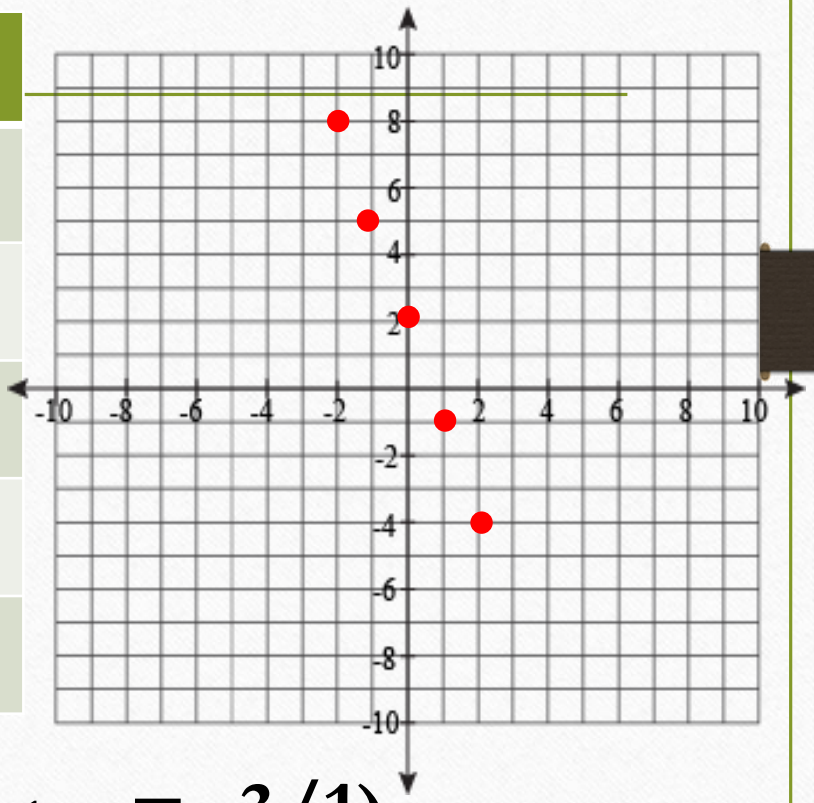
Is it linear?

x	y
1	0
2	2
3	4
4	6
5	8



Yes (slope = 2/1)

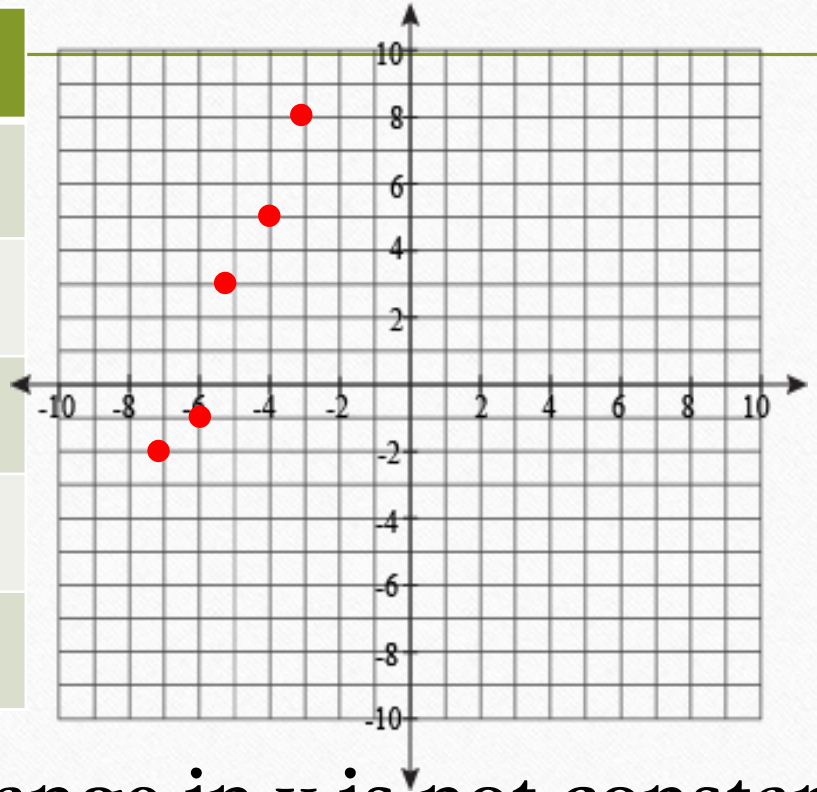
x	y
-2	8
-1	5
0	2
1	-1
2	-4



Yes (slope = -3/1)

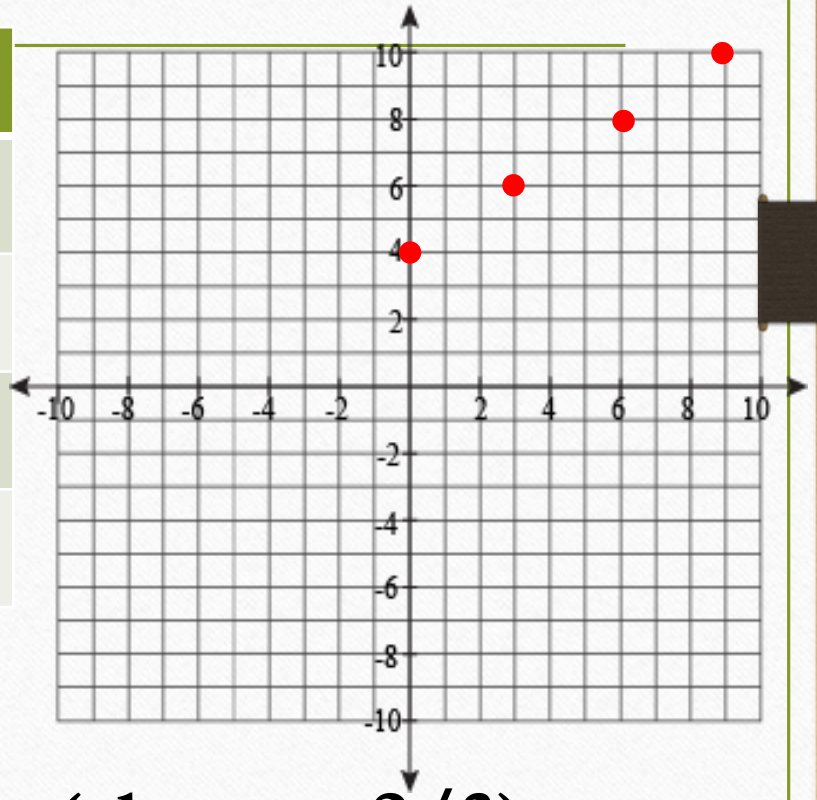
Is it linear?

x	y
-7	-2
-6	-1
-5	3
-4	5
-3	8



No (change in y is not constant)

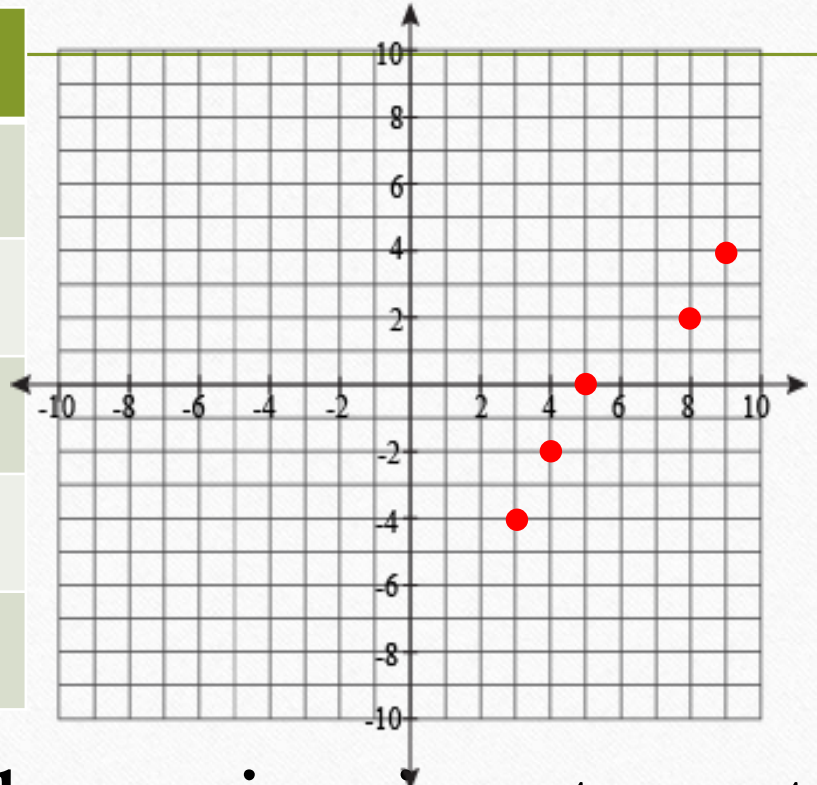
x	y
0	4
3	6
6	8
9	10



Yes (slope = 2/3)

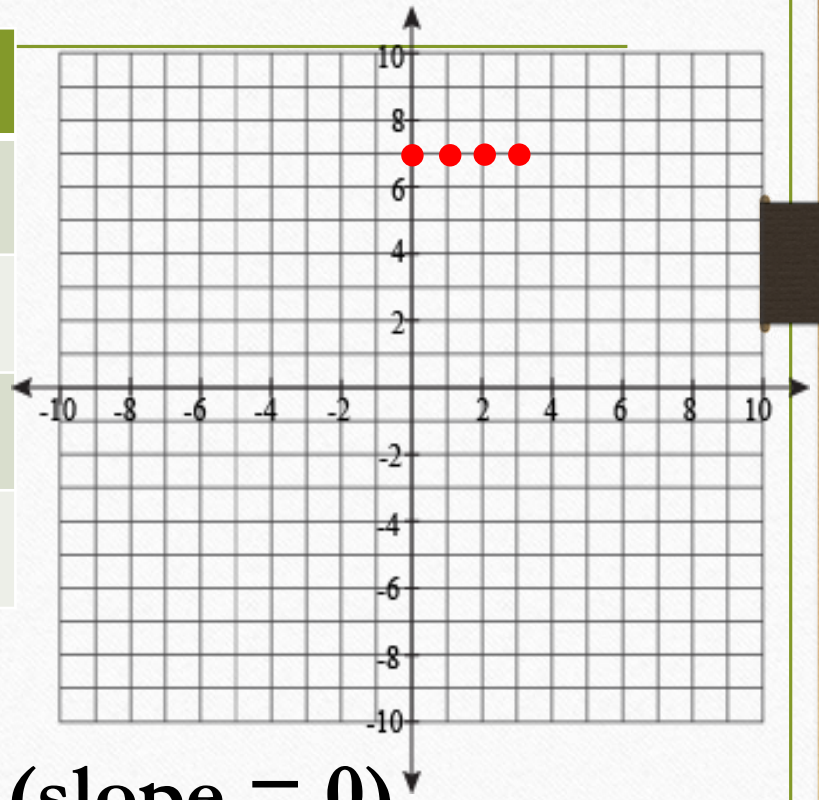
Is it linear?

x	y
3	-4
4	-2
5	0
8	2
9	4



No (change in x is not constant)

x	y
0	7
1	7
2	7
3	7



Yes (slope = 0)

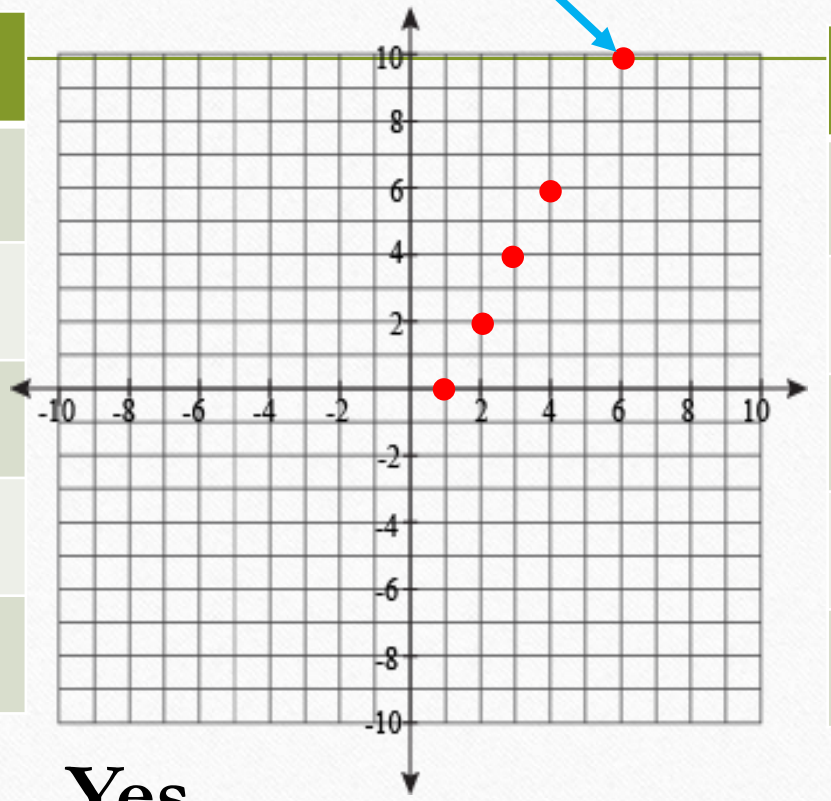
To determine if a table is linear:

- Both x AND y must have a constant rate of change!!!

Is it linear?

This dot is "farther apart", but it is still in line with the rest!

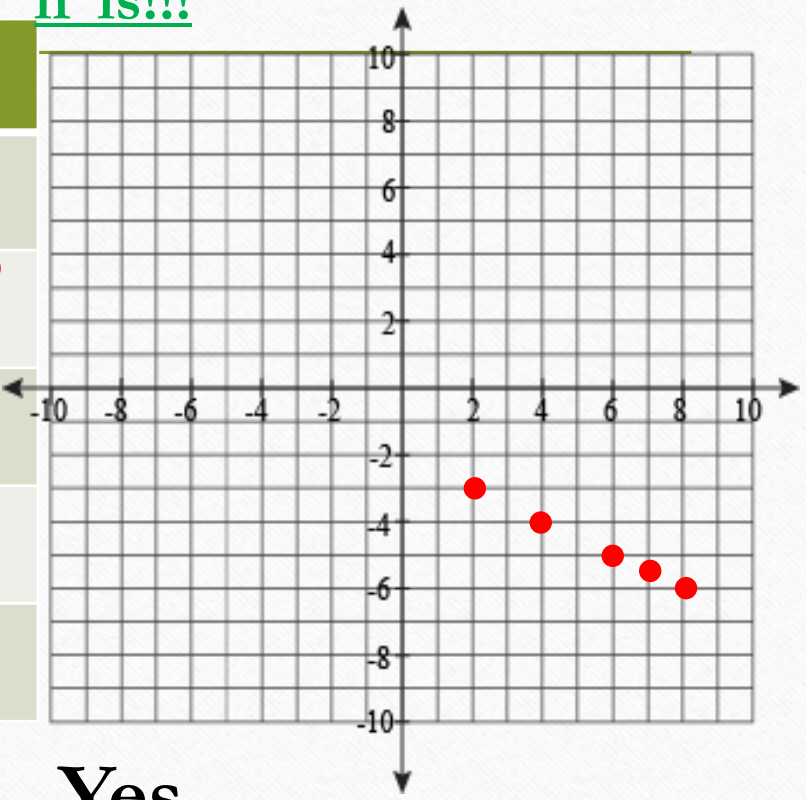
x	y
1	0
2	2
3	4
4	6
5	8
6	10



Yes

Even if it doesn't seem like the ROC is constant, you should still divide $\frac{\Delta y}{\Delta x}$ to see it if is!!!

x	y
2	-3
3	-3.5
4	-4
5	-4.5
6	-5
7	-5.5
8	-6



Yes

Is it linear? If so, give the rate of change.

Hours Worked	Money Earned
1	$8
2	$16
3	$24
5	$40

Yes; 8 dollars per hour

Is it linear? If so, give the rate of change.

Hours Worked	Money
1	$162
2	$174
3	$186
5	$210

Yes; 12 dollars per hour

Why doesn't $y \div x$ work for this one???

- $y \div x$ doesn't work because the original amount isn't 0.
- The person didn't actually make $162 in the first hour. Based on the pattern, he only made $12 in that hour.
- He must have "started" with $150.

WARNING:

- To find rate of change, you MUST do $\frac{\Delta y}{\Delta x}$, NOT JUST $\frac{y}{x}$!!!
- $\frac{y}{x}$ will only give you the slope if the "starting amount" (y-intercept) is zero.

Find the constant rate of change. Also, find the "original amount" if there is one.

Age	Height (in)
2	30
4	35
6	40
8	45

Rate of change = 2.5 inches per year

Original height = 25 in

$y = 2.5x + 25$

Note about decimals

- **I've said that it is normal to leave slope as a fraction. However, with story problems, it is better to divide it and get a decimal. This helps you understand the situation better!**

Find the constant rate of change. Also, find the "original amount" if there is one.

Age	Height (in)
4	16
5	20
7	28
9	36

Rate of change = 4 inches per year

Original height = 0 in

(For this one, $y \div x$ does work, because the original amount is 0!)

$$y = 4x$$

Find the constant rate of change. Also, find the "original amount" if there is one.

Age	Height (in)
3	4.5
4	6
5	7.5
6	9

Rate of change = 1.5 inches per year

Original height = 0 in

$y = 1.5x$

HOMEWORK

- Worksheet: Writing Equations from a Table