#### Created by Tripavanh K

Warmup 10/(Add the first 4 digits of pi together) FOR EACH: Find the constant rate of change. Also, find the "original amount" if there is one.

1)	Minutes	Sentences	2)	Age	Weight (lbs)	3)	Age	Height (in)	
	6	90		7	28		3	4.5	
	9	105		8	32		4	6	
	12	120		9	36		5	7.5	
	15	135		11	44		6	9	
Rate of change = 5 sentences per minute		ite	Rate of change = 4 pounds per year		l <b>t</b>	Rate of change = 1.5 inches per year			
riginal amount = 60 sentences			nces	Original height = 0 in			Original height = 0 in		
y = 5x + 60				y = 4	x		$\mathbf{v} = 1$	.5x	

## Honorable Mentions: October 9th

- Jasmyn M: Most used number in one of Prince's most popular songs
- Brea H: Number of letters in our school's mascot

# VOLUNTEER

• Collect the unused restroom passes from everyone and put them in the tray

- Piece of candy if you didn't use any!
- Smaller reward if you used some but not all (still thinking about what this is)

### NEW Restroom Passes

- Write your name on it right now!!!
- I prefer you do not cut them off.
- Non-transferrable.
- These must be used for drink passes as well.
- If you run out and still need to use one, you need to do 15 extra minutes of ALEKS that weekend. If you don't, you will come in to do it at lunch.

## Linear Quiz Retake...

• **MUST** stay after school today or tomorrow.

• You should let me know in advance if you're coming!

Minutes	Sentences	Age	Weight (lbs)	Age	Height (in)
6	90	7	28	3	4.5
9	105	8	32	4	6
12	120	9	36	5	7.5
15	135	11	44	6	9
y = 5x + 60		y	= 4x	y =	= 1.5x

# Proportional Relationships

- A proportional relationship is a special kind of linear relationship.
- **Proportional:** If it is linear AND the original value (y-intercept) is 0.
- Proportional: y = mx (no b!!!)
- If  $\frac{change in y}{change in x}$  is constant, it is linear.
- If  $y \div x$  is also constant, it is proportional.

# NOT PROPORTIONAL!!!



• It is **impossible** to be proportional but not linear.

Weeks	Books Read
10	11
20	22
30	33
40	44
1	

Rate of change = 1.1 books per week (Jim Kwik says this is about how many books CEOs read) **Original amount = 0 books** y = 1.1x**Proportional!** 

Years	Weight (lbs)
6	31
10	47
14	63
18	79

Rate of change = 4 lbs/yearOriginal weight = 7 lbs y = 4x + 7

Linear but not proportional

Minutes	Meigs Moolah signed	Rate of change = 12 MM per minute
2	24	Original amount = 0
5	60	
7	84	y = 12x
8	96	
		Proportional!

Years	Height	Not a constant rate of change!!!	
2	2'10''	2 to 4.3 inches per year	
4	3'4''	4 to 7: 2 inches per year	
7	3'10''		
11	4'6''	Not possible to write $a y = mx + b$	
		equation.	

Minutes	Problems left	Rate of change = -3 problems per minute
3	74	
5	68	Original amount = 83
7	62	
8	59	y = -3x + 83  OR  y = 83 - 3x

# HOMEWORK (Due tomorrow)

• Worksheet: Writing Equations from a Table