

Warm Up:

1. Given the linear equation

$4y + 3x = 16$, solve for y

$$\begin{array}{r} -3x \quad -3x \\ \hline 4y = -3x + 16 \\ \hline 4y = \frac{-3x}{4} + \frac{16}{4} \end{array}$$

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

↓ 3
↑
→ 4
b

2. **State** the slope and y-intercept of this function.

Slope: $-\frac{3}{4}$

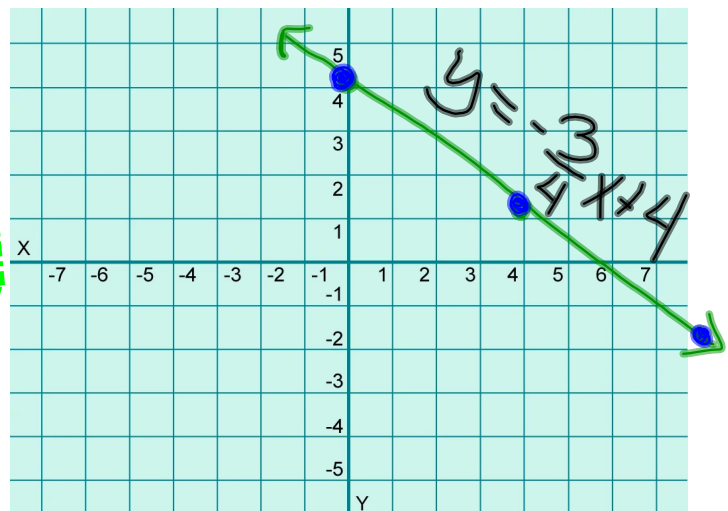
y-intercept 4

3. **Write** a table (with at least 3 coordinates) for this function.

↔	x	y	↔	X	Y1
	0	4		0	4
	4	1		4	1
	8	-2		8	-2

Press + f

4. **Graph** the function.



Linear Functions from tables & words

A phone company charges a monthly fee of \$40 plus \$10 per line, write an equation where x is the number of lines and y is the total cost.



Write an equation.

$$y = 10x + 40$$

↑ ↑
Slope y-int

Graph the equation (hint: count by 10s on the y-axis).



$$y = mx + b$$

↑
 Slope (change)
 constant (y-int) begin

Super Painters charges \$1.00 per square foot plus an additional fee of \$25.00 to paint a living room. If x represents the area of the walls of Francesca's living room, in square feet, and y represents the cost, in dollars

a) Write an equation

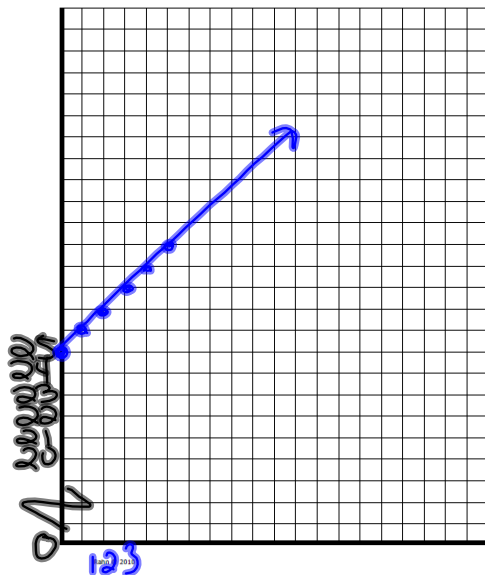
$$y = 1x + 25$$

slope

b) Graph

c) Describe the meaning of the coordinate point (0,25)

It costs \$25 as an initial fee just to show up



Max purchased a box of green tea mints. The nutrition label on the box stated that a serving of three mints contains a total of 10 Calories. On the axes below, graph the function, C , where $C(x)$ represents the number of Calories in x mints

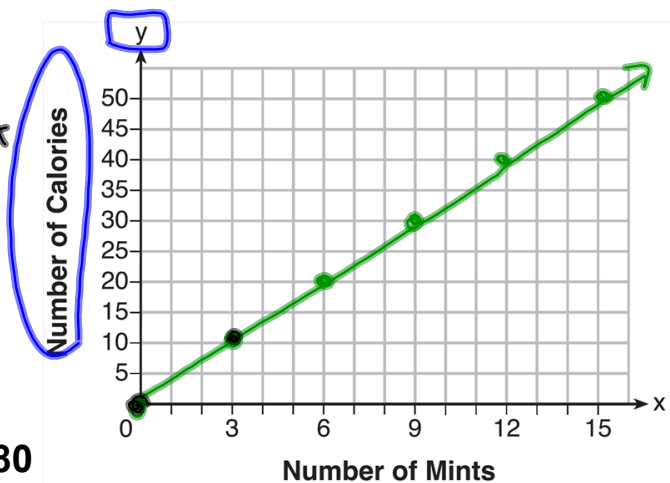
a) Graph

$$y = mx + b$$

$\frac{\text{Rise}}{\text{Run}}$ $y\text{-int}$

b) Based on your graph, write an equation that represents $C(x)$

$$C(x) = \frac{10}{3}x + 0$$



c) If a full box of mints contains 180 Calories. Using your equation, determine the total number of mints in the box.

$$180 \div \frac{10}{3}$$

54

$$y = \frac{10}{3}x$$

$$180 = \frac{10}{3}x$$

$$\frac{10}{3} \quad \frac{10}{3}$$

$54 = x$

Frank is reading Harper Lee's *To Kill a Mockingbird* for his English class. The book is ^{total} 280 pages long. He estimates he will take an hour to read 40 pages. How long will it take him to finish the book?

1) Write an equation

2) Graph

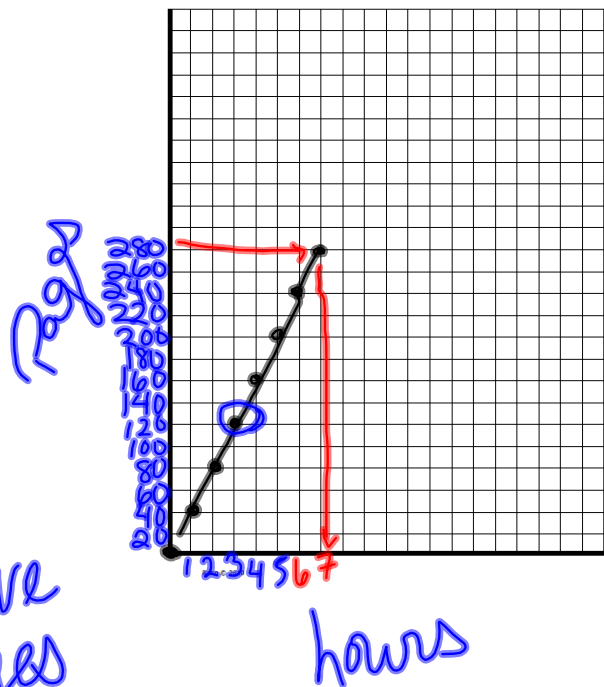
$$y = \frac{40x}{1} + 0$$

3) How long will it take him to finish the book

$$\frac{280}{40} = \frac{40x}{40}$$

4) Describe the meaning of the coordinate point (4, 120) on the graph

At 4 hours, they've read 120 pages

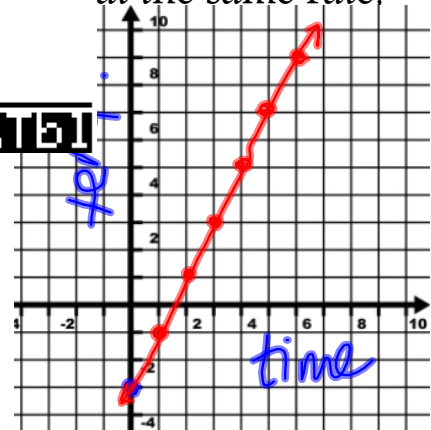




Tamika records the outside temperature at 6:00AM. The temperature rises 2 degrees for the next 6 hours. If the temperature continues to rise at the same rate, what will the temperature be at 8:00AM?

X	Y ₁
6	9
7	11
8	13
9	15
10	17
11	19
12	21

at 6:00AM. The temperature rises 2 degrees for the next 6 hours. If the temperature continues to rise at the same rate,



a) Write a function that models the temperature.

$$y = 2x - 3$$

b) Sketch the graph of the function.

c) Find the temperature 8 hours after the first temperature recording.

$$y = 2(8) - 3$$

$$y = 13$$

d) Does using a linear function realistically represent the temperature for the next 24 hours? Explain.

Not always. If the sun is not present the temp. usually decreases.

6A	-3
7A	-1
8A	1
9A	3
10A	5
11A	7
12P	9
1P	11
8P	13