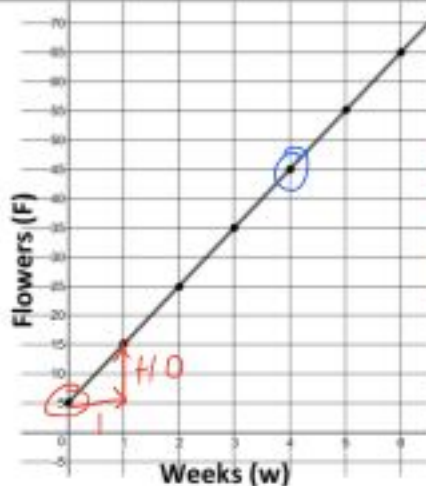


Interpreting Linear Graphs

Mr. G is keeping track of how many flowers bloom in his garden. His data is below, with number of flowers (F) and the number of weeks (w). He wants to find an equation so he can predict how many flowers he will have!



a) Find an equation for the number of flowers (F) related to the number of weeks (w).

Using the graph, we need to find:

Slope = $+10$ y-intercept = $+5$

Write the equation:

$$F = 10w + 5 \Rightarrow F = 10w + 5$$

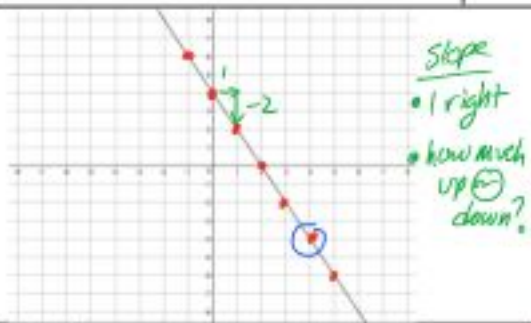
b) Check your equation (choose a point on the graph) (4, 45)

$$F = 10 \cdot (4) + 5 = 40 + 5 = 45 \checkmark$$

c) Predict the number of flowers after 12 weeks

$$w = 12$$

$$F = 10 \cdot 12 + 5 = 120 + 5 = 125 \checkmark$$



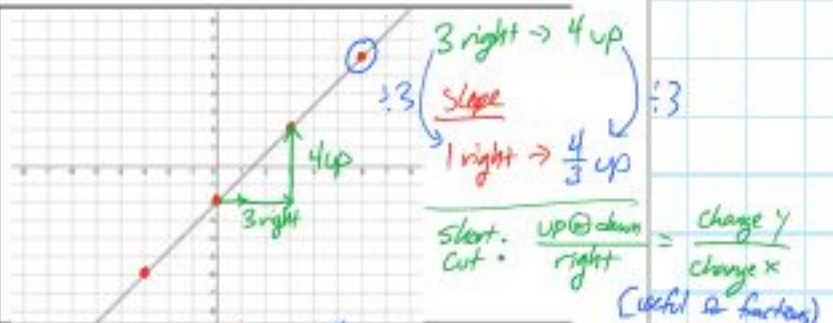
slope
• 1 right
• how much
up ⊕
down?

Write the equation: slope = -2 y-int = 4

$$y = -2x + 4$$

Check your equation: (4, -4)

$$y = -2(4) + 4 = -8 + 4 = -4 \checkmark$$



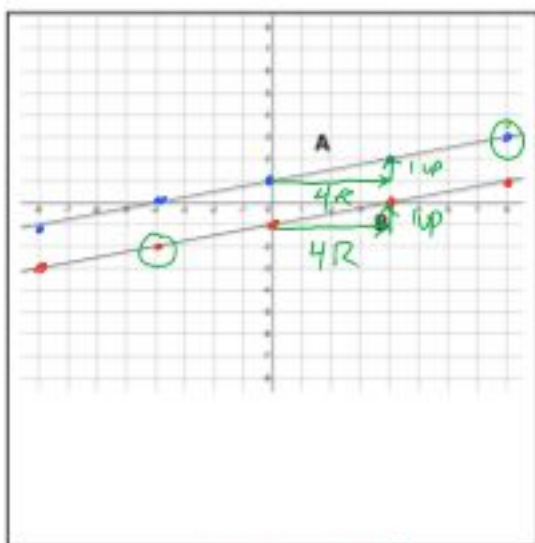
3 right → 4 up
slope
1 right → $\frac{4}{3}$ up
steep. cut = $\frac{\text{change } y}{\text{change } x}$
(useful for fractions)

Write the equation: slope = $\frac{4}{3}$ y-int = -2

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

Check your equation: (6, 6)

$$y = \frac{4}{3} \cdot \frac{6}{1} - 2 = \frac{8}{1} - 2 = 6 \checkmark$$



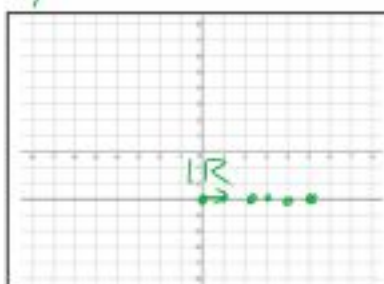
A: Write the equation $Slope = \frac{\text{change } y}{\text{change } x} \quad y\text{-int} = 1$
 $y = \frac{1}{4}x + 1$
 $= \frac{1}{4} = \frac{1}{4}$

A: Check the equation (8, 3)
 $y = \frac{1}{4} \cdot 8^2 + 1 = 2 + 1 = 3 \checkmark$

B: Write the equation $Slope = \frac{1}{4} \quad y\text{-int} = -1$
 $y = \frac{1}{4}x - 1$

B: Check the equation (-4, -2)
 $y = \frac{1}{4}(-4) - 1 = \frac{-4}{4} - 1 = -1 - 1 = -2 \checkmark$

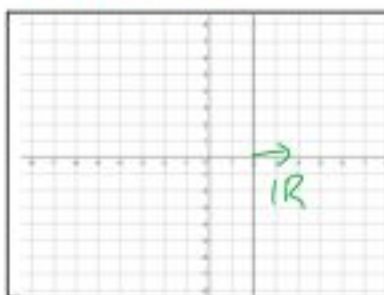
We call these 2 lines Parallel, which means they have the same slope but different y-int.



Slope = $0 = \frac{0\text{up}}{1\text{Right}}$ y-intercept = -3
 Write the equation:
 $y = 0x - 3 \Rightarrow \boxed{y = -3}$

y val is always -3

Flat lines are called horizontal lines. They have the same y value everywhere!
 All horizontal lines have a slope of 0 .



Slope = \emptyset none y-intercept = \emptyset DNE none
 Write the equation:
 x val is always $+2$
 $\boxed{x = 2}$

Straight up and down lines are called vertical lines. They have the same x value everywhere!
 All vertical lines do not have a slope or a y-int.

Homework: 4.2 #9 (abcde) 4.3 #1 (all), 2(right) 3 (all), 4-5 (right)