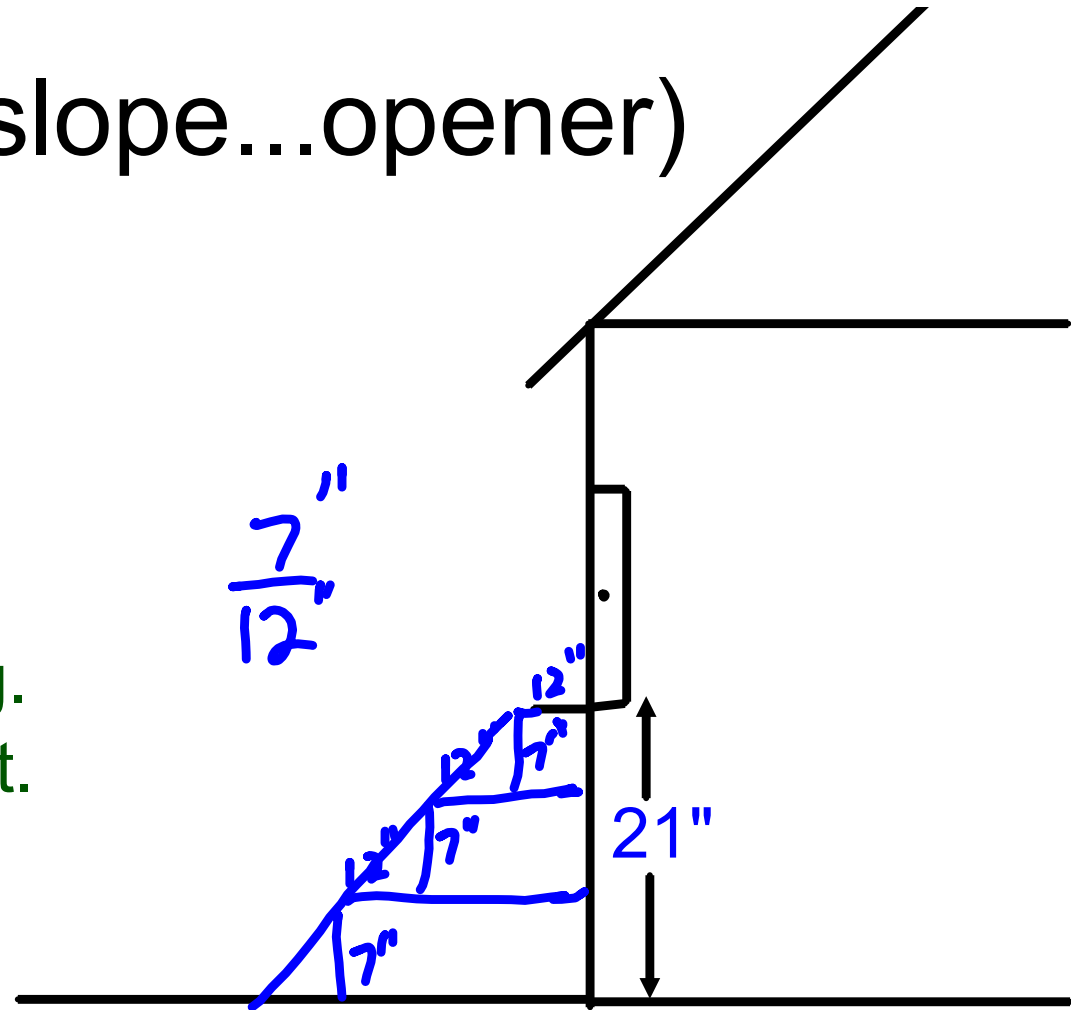


Slopener (get it...slope...opener)

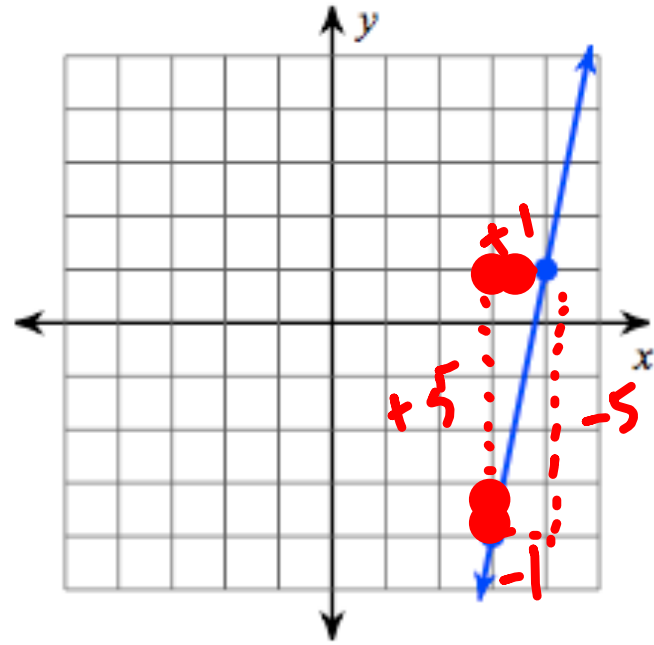
You need to design a set of steps from your driveway to the door. The height from the driveway to the bottom of the door is 21 inches. Each step needs to fit a person's foot that is 12 inches long. Each step needs to be the same height.

- 1.) Draw a picture of your steps.
- 2.) What is the slope of the line created by connecting the edge of each step?



Find Slope $\frac{\text{RISE}}{\text{RUN}}$

2)



$$m = \frac{-5}{-1} = \frac{+5}{+1} = 5$$

Find Slope

6) $(-13, -12), (19, 17)$

A diagram illustrating the change in x and y between the two points. A horizontal line segment with arrows at both ends, spanning from x = -13 to x = 19, is labeled with the number 32 below it. A vertical line segment with arrows at both ends, spanning from y = -12 to y = 17, is labeled with the number 29 above it.

$$m = \frac{29}{32}$$

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

Find Slope

$$15) y = -\frac{2}{3}x - 2$$

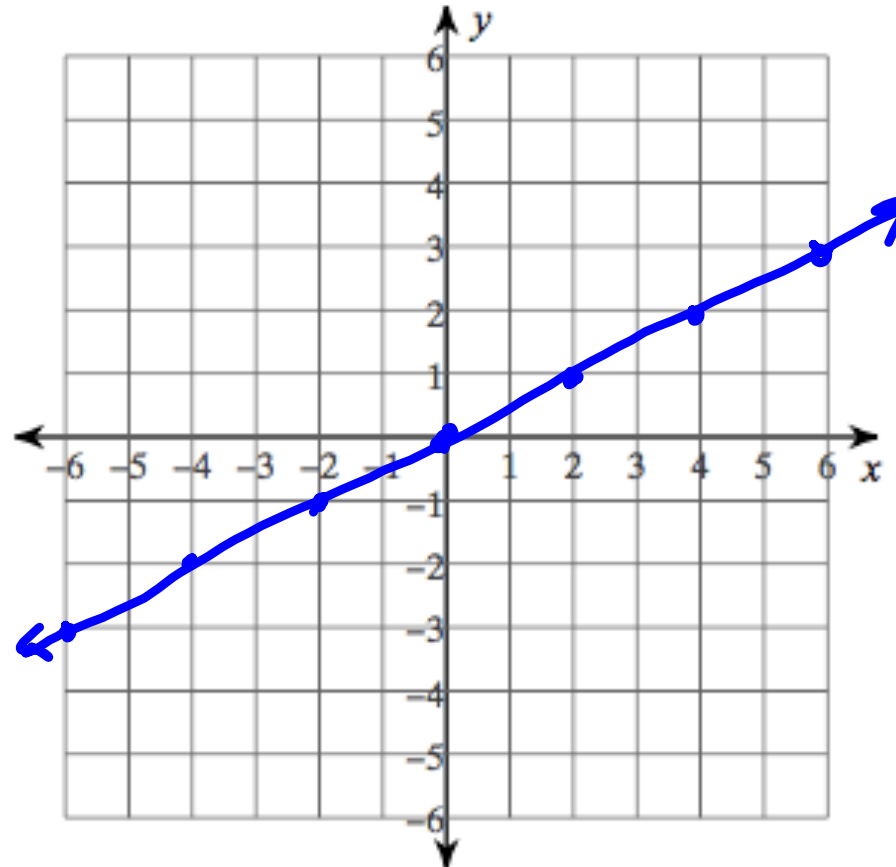
$$y = mx + b$$

$$m = -\frac{2}{3}$$

Graphing Equations

$$3) y = \frac{1}{2}x + 0$$

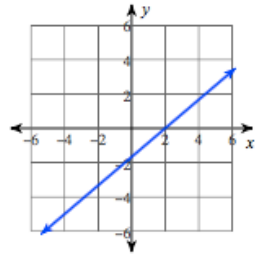
$$y = mx + b$$



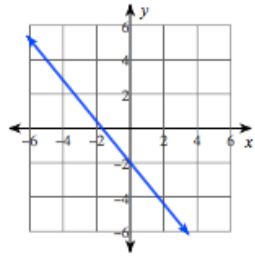
Graphing Equations

6) $y = \frac{6}{5}x + 2$

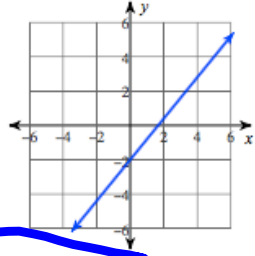
A)



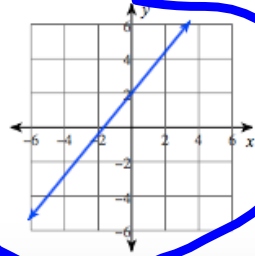
B)



C)



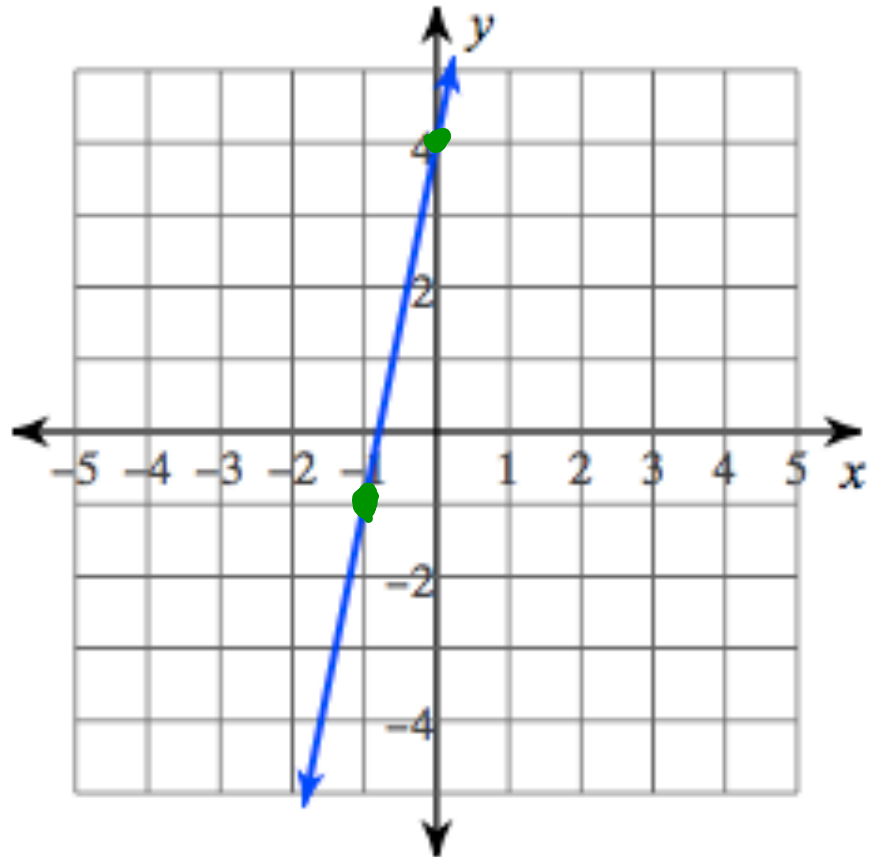
D)



$$y = \frac{6}{5}x + 2$$

Writing Equations

2)



$$m = \frac{-5}{-1} = 5$$

$$b = 4$$

$$y = 5x + 4$$

Writing Equations

$$y = mx + b$$

3) Slope = $\frac{2}{3}$, y-intercept = -1

$$m = \frac{2}{3}$$

$$b = -1$$

$$y = \frac{2}{3}x + (-1)$$
$$y = \frac{2}{3}x - 1$$

Writing Equations

9) through: $(-3, 1)$, slope = $\frac{2}{3}$
 x y

$$m = \frac{2}{3}$$

$$b = 3$$

$$y = mx + b$$

$$1 = \frac{2}{3}(-3) + b$$

$$1 = -\frac{6}{3} + b$$

$$1 = -2 + b$$

$$+2 \quad +2$$

$$3 = b$$

$$y = \frac{2}{3}x + 3$$

Writing Equations

17) through: $(-5, 4)$ and $(-2, 1)$

$$m = \frac{-3}{3} = -1$$

$$b = -1$$

$$\begin{aligned}
 1 &= -1(-2) + b \\
 1 &= 2 + b \\
 -2 & \quad -2 \\
 \hline
 -1 &= b
 \end{aligned}$$

$$\begin{aligned}
 y &= -1x - 1 \\
 y &= -x - 1
 \end{aligned}$$

