Survey is in Classroom

What is your protocol for finding slope, x-intercept and y-intercept given an equation in Standard Form?

$$5x + 4y = 24$$

$$-5x \qquad\qquad -5x$$

$$\frac{4y}{4} = \frac{-5x}{4} + \frac{24}{4}$$

$$y = \frac{-5}{4}x + 6$$

1. Put in S-I form

$$\text{Slope} = -\frac{5}{4}$$
$$y\text{-int} = (0, 6)$$

Use standard form here

$$5x + 4y = 24$$
$$5x + 4(0) = 24$$
$$\frac{5x}{5} = \frac{24}{5}$$
$$x = \frac{24}{5}$$

2. Let y = 0 to find x-int

$$x\text{-int} = \left(\frac{24}{5}, 0\right)$$

Two Forms of Linear Equations

Slope-Intercept: $y = mx + b$

slope
(coefficient
of x)

y-int

Standard Form: $Ax + By = C$

- Easy to find x- and y-intercepts

- Easiest way to write certain equations

$5s + 10c = 600$

How to graph a linear equation?

How many points do we
need to make a line?

2

How to Graph an Equation in Slope-Intercept Form
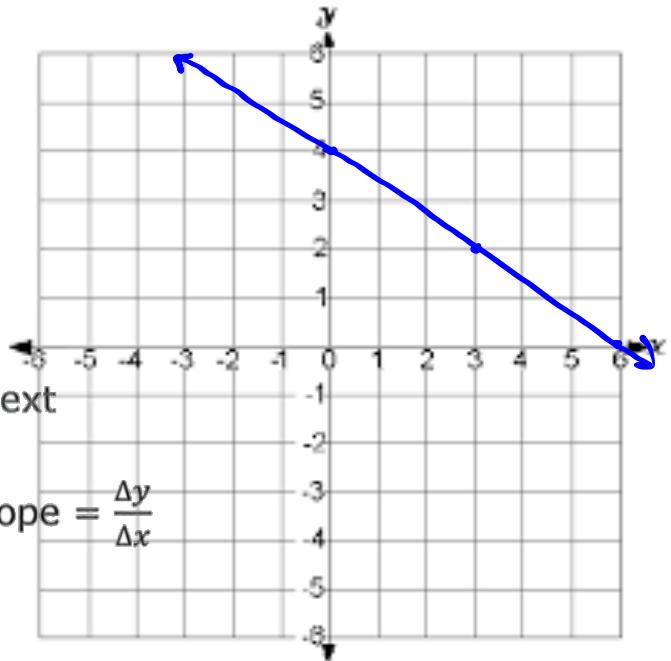
Example: $y = -\frac{2}{3}x + 4$

slope y-int

Step 1: Plot the y-intercept

Step 2: Use the slope to find the next point on the line from the y-intercept. Remember slope $= \frac{\Delta y}{\Delta x}$
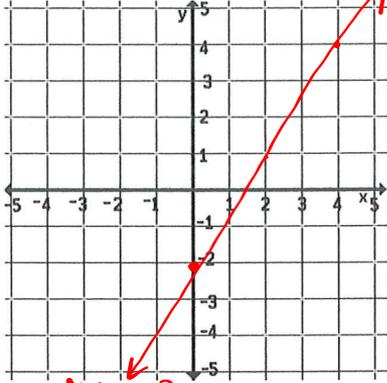
$$\frac{\Delta y}{\Delta x} = \frac{-2}{3}$$

Step 3: Draw a line **through** both points with a ruler. Don't forget arrows!
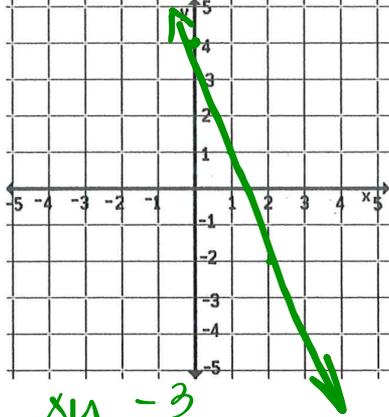
Practice Graphing:
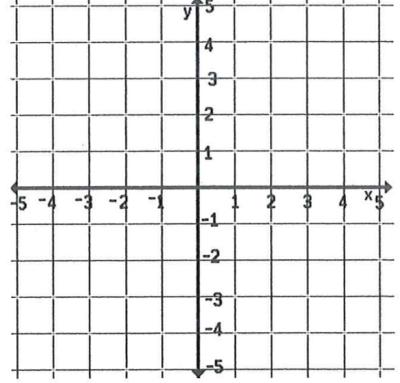
$$y = \frac{3}{2}x - 2$$

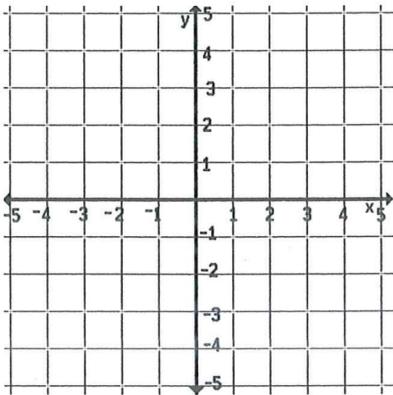$$\frac{\Delta y}{\Delta x} = \frac{3}{2}$$

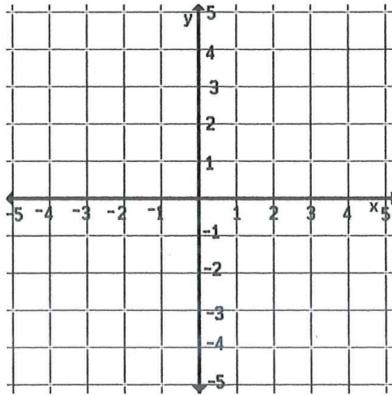$$y = -3x + 4$$

$$\frac{\Delta y}{\Delta x} = \frac{-3}{1}$$
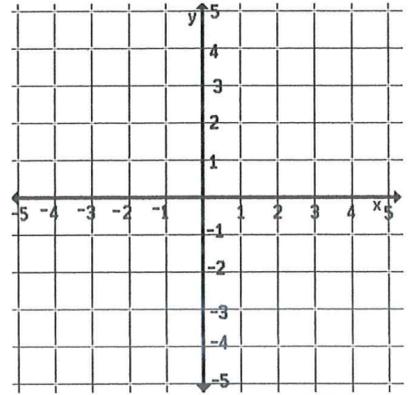
$$y = -\frac{2}{3}x + 4$$

$$y = 4x + 0$$

$$y = 2x - 5$$

$$y = \frac{5}{4}x - 1$$

What Happened to the Guy Who Fell Into an Upholstery Machine?

Use the slope and y-intercept to graph each equation. The graph, if extended, will cross a letter. Write this letter in the box containing the exercise number.

1 $y = \frac{3}{4}x - 2$ **4** $y = \frac{1}{3}x + 4$ **7** $y = -\frac{1}{2}x$

2 $y = -2x + 1$ **5** $y = 3x - 1$ **8** $y = -4x + 3$

3 $y = -\frac{5}{2}x - 4$ $\frac{\Delta y}{\Delta x} = \frac{-5}{2} = \frac{5}{-2}$ **6** $y = -\frac{7}{4}x - 5$ **9** $y = \frac{8}{3}x - 5$
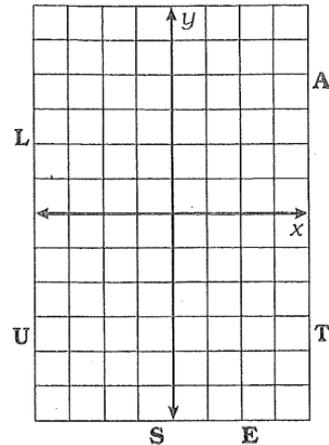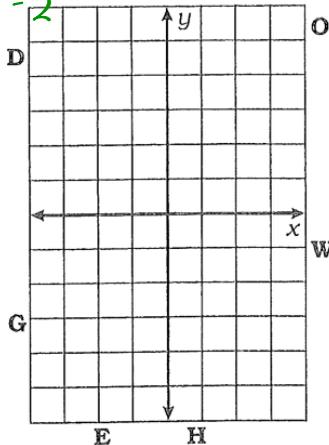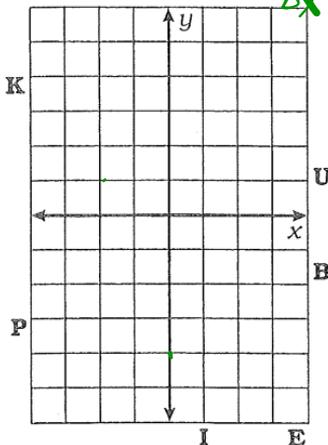
10 $y = x + 3$

11 $y = -x - 4$

12 $y = x$

13 The temperature is –6°C and rising at a rate of 2° per hour.

14 The temperature is 12°C and dropping at a rate of 3° per hour.

15 $y = 5$ **17** $y = -1$

16 $x = -2$ **18** $x = 3$
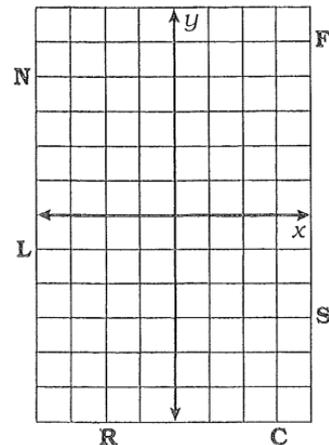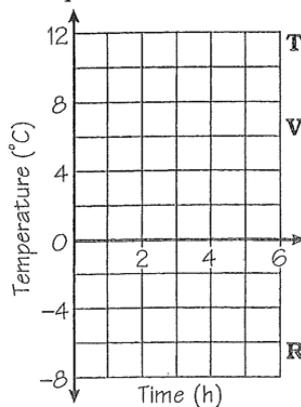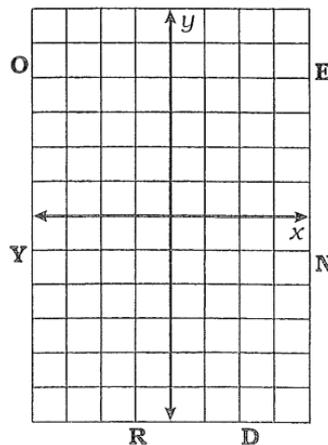
6	12	3	9	15	1	17	7	10	14	8	18	4	13	2	16	5	11

Homework

Finish classwork