QUIZ TOMORROW

L3 General Form

Scheduled Review

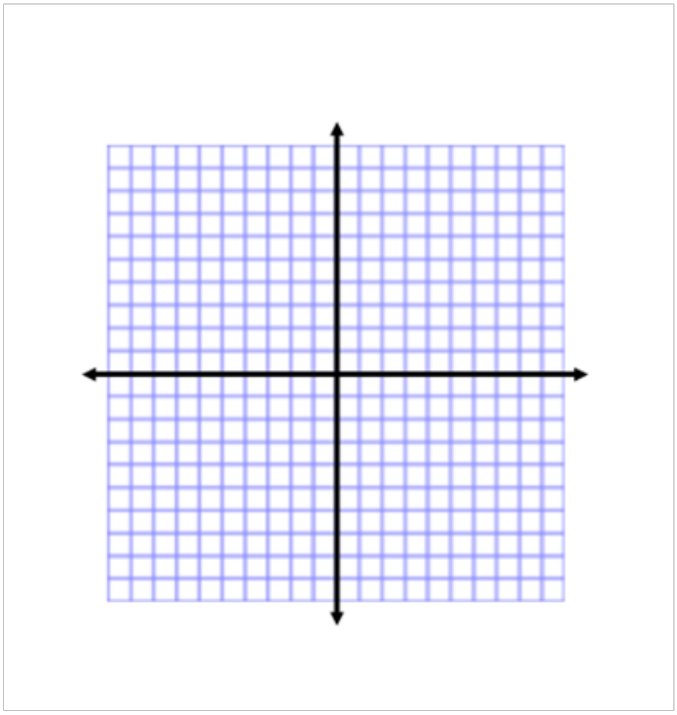
Make an equation of a line that has the points (-1, 7) and (5, -1) on it.

Draw the graph of

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

Point

Slope



The third way to write a linear equation is called the General Form.

$Ax + By + C = 0$ no fractions

+ +/- +/-

① Slope int $y = mx + b$

② Slope point $y - y_1 = m(x - x_1)$

where A is a whole number (not negative, decimals or fractions) while B and C are integers (no decimals or fractions)

Put the following two equations into general form

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

$Ax + By + C = 0$

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

$y + \frac{2}{3}x - 4 = 0$

$3\left[\frac{2}{3}x + y - 4 = 0\right]$

$\frac{2}{3}x + y - 4 = 0$

$2x + 3y - 12 = 0$

→ Bring everything left

→ Rearrange (X, y, C)

→ Get rid of fractions

$y - 4 = \frac{1}{2}(x + 7)$

Eg Find the equation of a line in general form that has:

a) a slope of 3 and goes through $(-1,2)$ x_1, y_1 $Ax+By+C=0$

→ Slope int / Slope Point

$y-y_1=m(x-x_1)$

$y-2=3(x-(-1))$

$y-2=3(x+1)$

$y-2=3x+3$

$y-2-3x-3=0$

$-3x+y-2-3=0$

$-3x+y-5=0$

$-1(-3x+y-5=0)$

$3x-y+5=0$

b) goes through the points of $(-3,10)$ and $(2,-5)$

① Find slope
② Choose either point for slope point form

For each of the following find
a) the slope
b) the y-intercept
c) the x-intercept

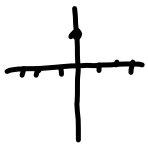
eg) $12x + 2y - 8 = 0$ General form

Slope-int form $y = mx + b$ $y = -6x + 4$

$12x + 2y - 8 = 0$

$\frac{2y}{2} = \frac{-12x}{2} + \frac{8}{2}$

a) -6 (x)
b) 4 or (0, 4)



c) Set $y = 0$

$0 = -6x + 4$

$\frac{-4}{-6} = \frac{-6x}{-6}$ (2/3, 0)

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

eg) $5x - 3y - 6 = 0$

Try

To graph a linear equation in general form there are two ways to do it.

a) Get the slope and a point
Rearrange the equation to slope y-intercept form. You now have the slope but your y-intercept might be a rational number that is hard to put on the graph.

b) Get two points
Find two points on the graph and draw a line through them. The easiest two points to get are the x and y intercepts. Once again though the intercepts might be rational numbers that hard to put on the graph.

Graph each of the following graphs

$x + 4y + 8 = 0$ General → Slope int

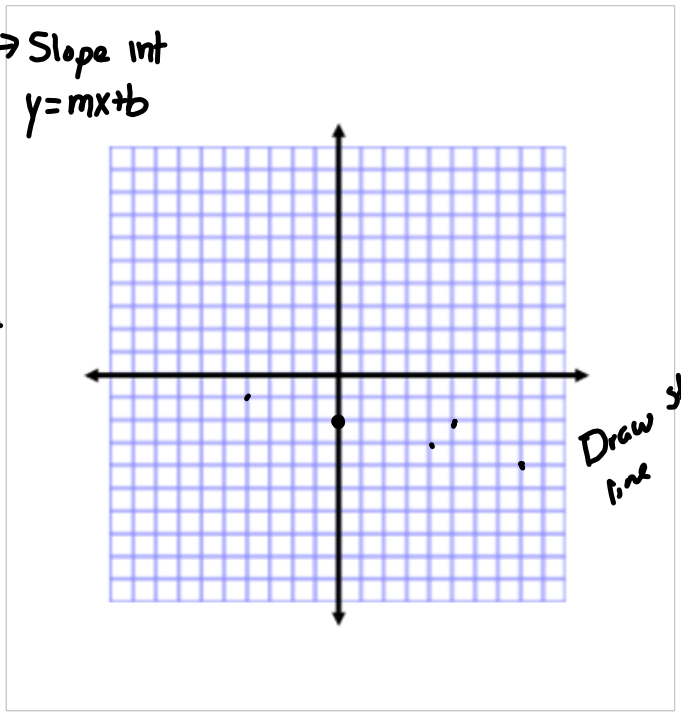
$y = mx + b$

$\frac{4y}{4} = \frac{-x}{4} - \frac{8}{4}$

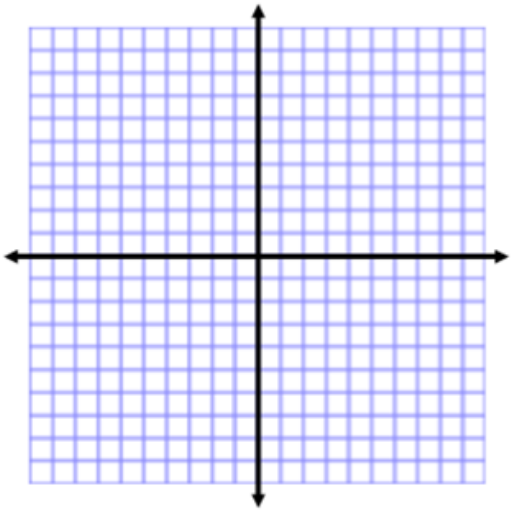
$y = -\frac{1}{4}x - 2$

Slope: $-1/4$ $\frac{-1}{4} = \frac{\text{rise}}{\text{run}}$

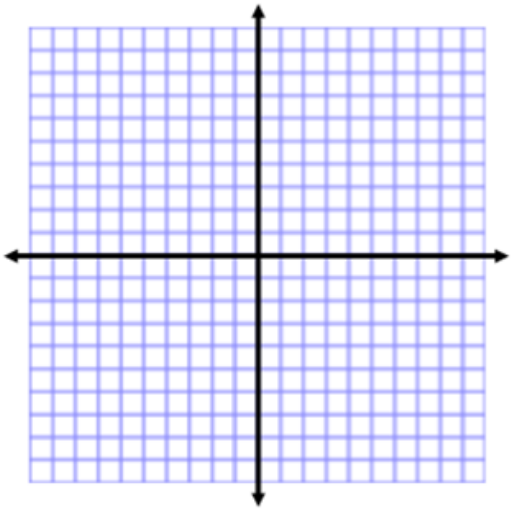
y-int: -2



$8x + 5y - 40 = 0$



$x - 2y - 7 = 0$



Homework Pg 384 #5, 6, 8, 12-14, 18, 21-23