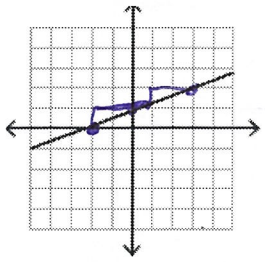
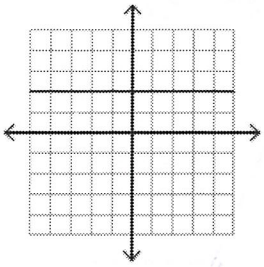
Name Key Block_____ Date_____

Essential Question: What is slope-intercept form?

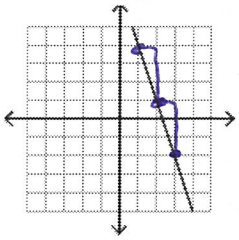
Review: Find the slope of the line. Draw rise and run when possible.

1) 

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

2) 

m = 0

3) 

m = -3

Review: Find the slope of the line that passes through these points. Use the slope formula.

4) (7,–4) , (9,–1)

$\frac{-1+4}{9-7} = \frac{3}{2}$

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

5) (3,5) , (–2,5)

$\frac{5-5}{3+2} = \frac{0}{5} = 0$

m = 0

6) (–1,3) , (–1,0)

$\frac{0-3}{-1+1} = \frac{-3}{0}$

m = undefined

Slope-Intercept Form

$y = mx + b$

m is the slope

b is the y-intercept

I. Find the slope and y-intercept of each Slope-Intercept Form equation.

1) $y = 2x + 3$

m = 2 b= 3

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

m = $-\frac{2}{3}$ b= -4

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

m = $\frac{1}{3}$ b= -2

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

m = $-\frac{1}{5}$ b= 4

5) $y = \frac{7x}{13} - 14$

m = $\frac{7}{13}$ b= -14

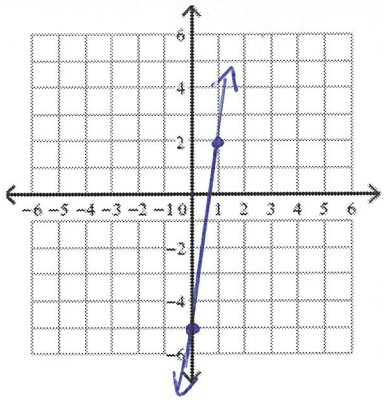
6) $y = -16$

m = 0 b= -16

II. Identify the slope and the y-intercept. Graph the Slope-Intercept Form equations. Label two important points.

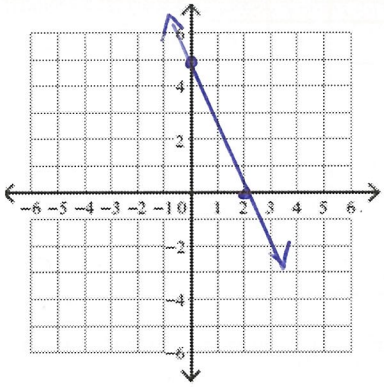
7) $y = 7x - 5$

m = 7 b= -5



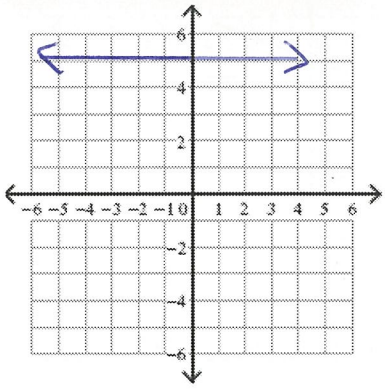
8) $y = -\frac{5}{2}x + 5$

m = $-\frac{5}{2}$ b= 5



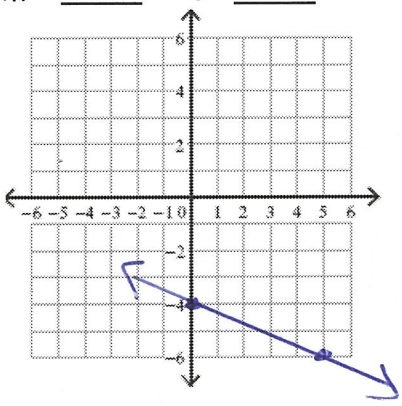
9) y = 5

m = 0 b= 5



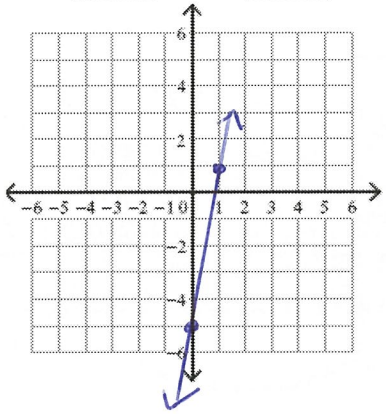
10) $y = -\frac{2}{5}x - 4$

m = $-\frac{2}{5}$ b= -4



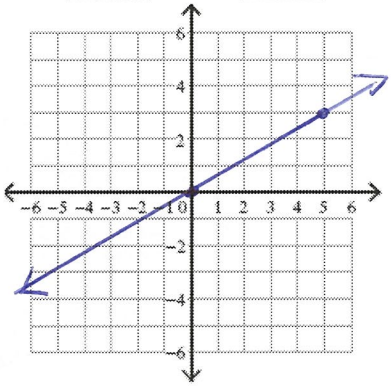
11) $y = 6x - 5$

m = 6 b= -5



12) $y = \frac{3}{5}x$

m = $\frac{3}{5}$ b= 0



III. Write an equation in Slope-Intercept form given m and b.

1) $m = \frac{3}{2}; b = -8$

SI: $y = \frac{3}{2}x - 8$

2) $m = -3; b = -\frac{2}{3}$

SI: $y = -3x - \frac{2}{3}$

3) $m = 0; b = 7$

SI: $y = 7$

4) $m = -\frac{4}{7}; b = 0$

SI: $y = -\frac{4}{7}x$

5) $m = 4; b = -7$

SI: $y = 4x - 7$

6) $m = \frac{3}{8}; b = -\frac{5}{6}$

SI: $y = \frac{3}{8}x - \frac{5}{6}$

Write an equation in Slope-Intercept form given 2 points.

1) (–3,–1),(6,–4)

m = $-\frac{1}{3}$ $\frac{-4+1}{6+3}=\frac{-3}{9}=-\frac{1}{3}$

$\frac{\Delta y}{\Delta x}$

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

Fill in $y=mx+b$ Find b!

SI: $y=-\frac{1}{3}x-2$

2) (–3,–4),(–2,–8)

m = –4 $\frac{-4+8}{-3+2}=\frac{4}{-1}$

b = –16 $-4=-3(-4)+b$ $-4=12+b$ $-16=b$

SI: $y=-4x-16$

3) (5,1),(8,–2)

m = –1 $\frac{1+2}{5-8}=\frac{3}{-3}=-1$

b = 6 $1=-1(5)+b$ $1=-5+b$ $6=b$

SI: $y=-x+6$

4) (6,0),(0,4)

m = $-\frac{2}{3}$ $\frac{4-0}{0-6}=\frac{4}{-6}=-\frac{2}{3}$

b = 4 $4=-\frac{2}{3}(0)+b$ $4=b$

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

5) (–5,2),(0,7)

m = 1 $\frac{7-2}{0+5}=\frac{5}{5}=1$

b = 7 $y=mx+b$ $7=1(0)+b$ $7=b$

SI: $y=x+7$

6) (5,2),(–7,–4)

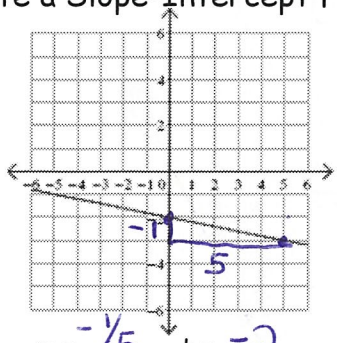
m = $\frac{1}{2}$ $\frac{2+4}{5+7}=\frac{6}{12}=\frac{1}{2}$

b = $-\frac{1}{2}$ $2=5(\frac{1}{2})+b$ $2-\frac{5}{2}=b$ $\frac{4}{2}-\frac{5}{2}=b$ $-\frac{1}{2}=b$

SI: $y=\frac{1}{2}x-\frac{1}{2}$

Write a Slope-Intercept Form equation for each line.

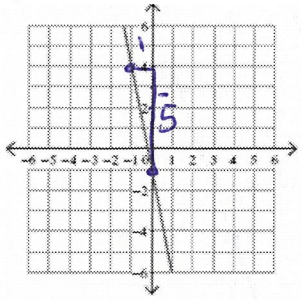
1)



m = $-\frac{1}{5}$ b= –2

SI: $y=-\frac{1}{5}x-2$

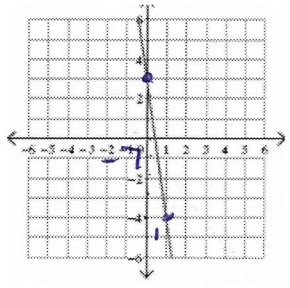
2)



m = –5 b= –1

SI: $y=-5x-1$

3)



m = –7 b= 3

SI: $y=-7x+3$

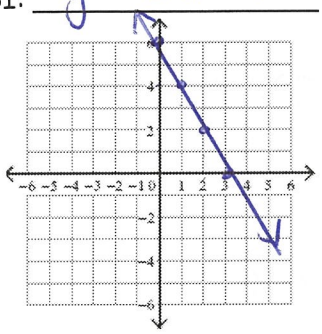
Write the each equation in slope-intercept form, then graph the equation.

1) $4x + 2y = 12$

$2y = -4x + 12$

$y = -2x + 6$

SI: $y = -2x + 6$

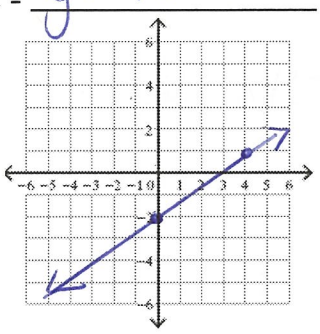


2) $3x - 4y = 8$

$-4y = -3x + 8$

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

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

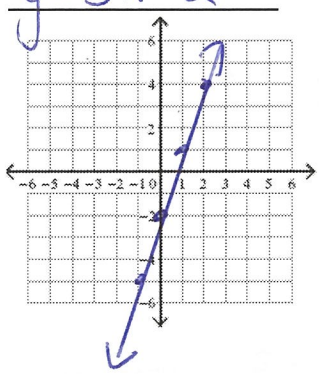


3) $6x - 2y = 4$

$-2y = -6x + 4$

$y = 3x - 2$

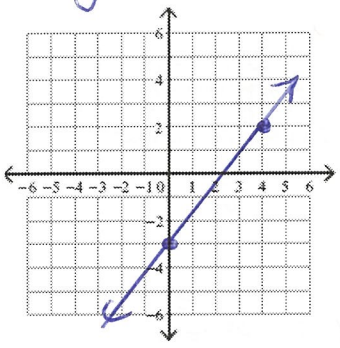
SI = $y = 3x - 2$



4) $4y = 5x - 12$

$y = \frac{5}{4}x - 3$

SI = $y = \frac{5}{4}x - 3$

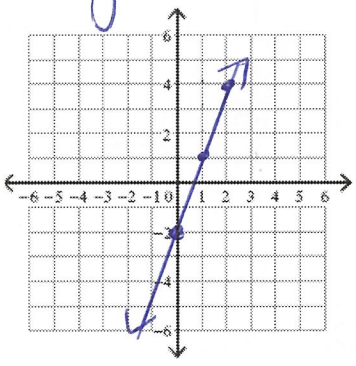


5) $3x - y = 2$

$-y = -3x + 2$

$y = 3x - 2$

SI = $y = 3x - 2$



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

$y + 3 = 2x - 2$

$y = 2x - 5$

SI = $y = 2x - 5$