Name Key Date _____ Period _____

Review of Linear Equations

Write an equation for the line with the given information. Graph each line.

1. slope $-\frac{5}{3}$, (3, -10)

$y+10 = -\frac{5}{3}(x-3)$

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

2. slope 2, (-3,0)

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

$y = 2x+6$

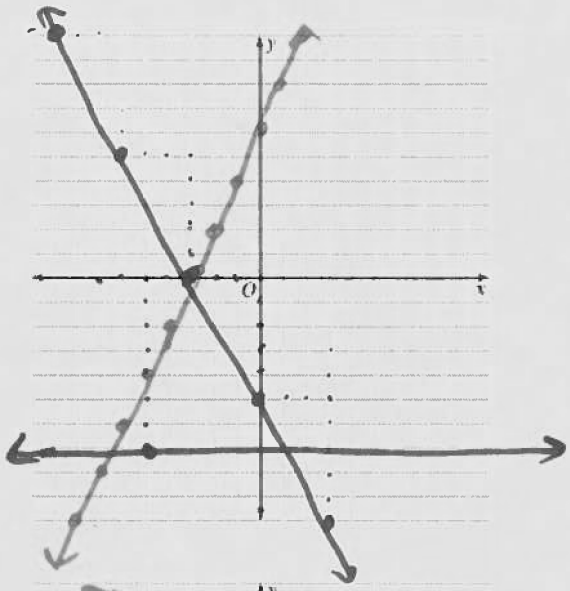
3. slope 0, (-5, -7)

$y+7 = 0(x+5)$

$y = -7$

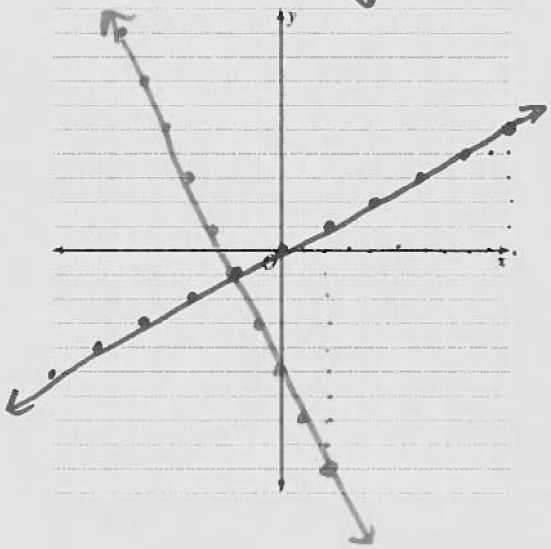
4. slope $\frac{1}{2}$, (10,5)

$y-5 = \frac{1}{2}(x-10)$



5. slope -2, (2, -9)

$y+9 = -2(x-2)$



6. (3, -8), (9,4)

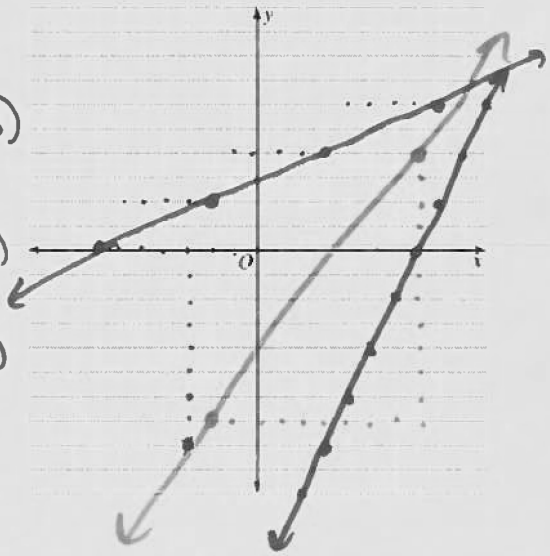
$\frac{4+8}{9-3} = \frac{12}{6} = 2$

$y-4 = 2(x-9)$ OR $y+8 = 2(x-3)$

7. (-2,2), (-7,0)

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

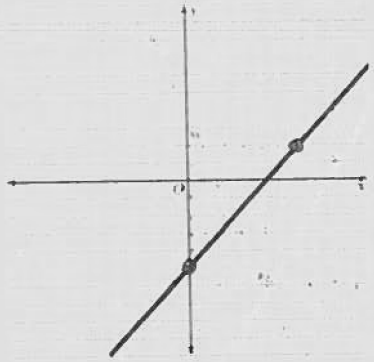
$y-0 = \frac{2}{5}(x+7)$ OR $y-2 = \frac{2}{5}(x+2)$



8. (7,4), (-2,-7)

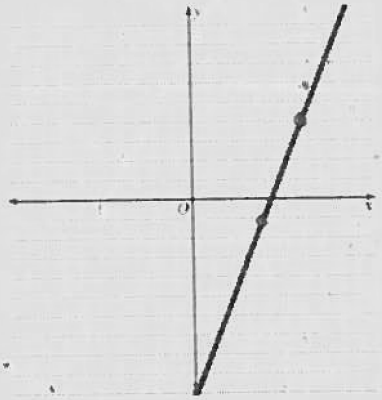
$\frac{-7-4}{-2-7} = \frac{-11}{-9} = \frac{11}{9}$

Write an Equation from Each Line

1. 

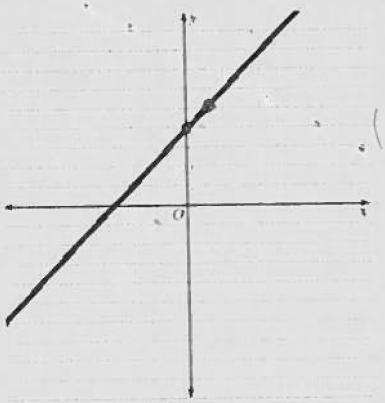
Equation:

$y = \frac{7}{6}x - 5$

2. 

Equation:

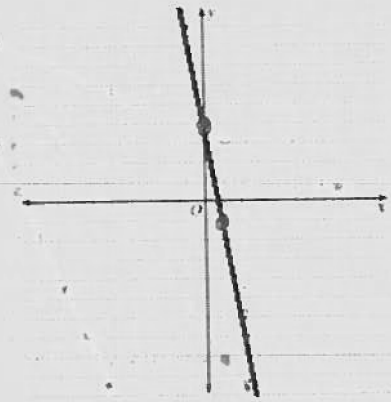
$y + 1 = \frac{5}{2}(x - 4)$

3. 

Equation:

$y = 1x + 4$ (OR)

$y - 4 = 1(x - 0)$

4. 

Equation:

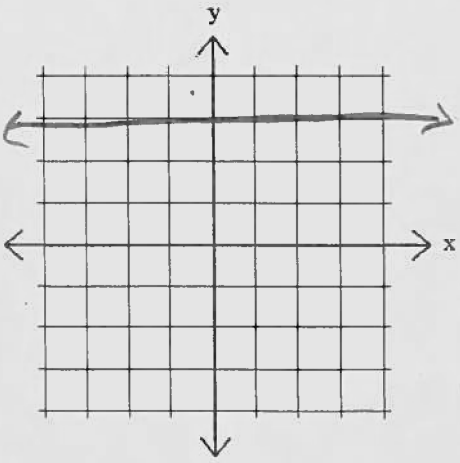
$y = -5x + 4$

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

Answer Vary...

Create four different linear functions. Graph and find the equation for each.

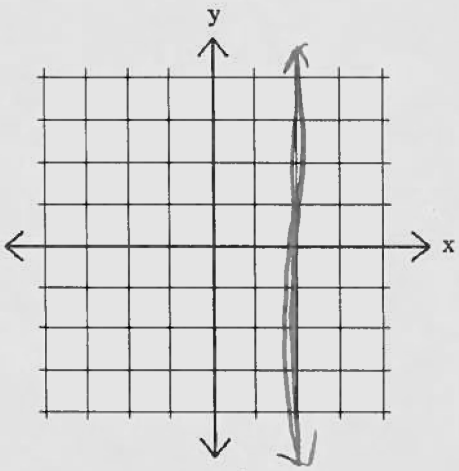
5.



Equation:

$y = 3$

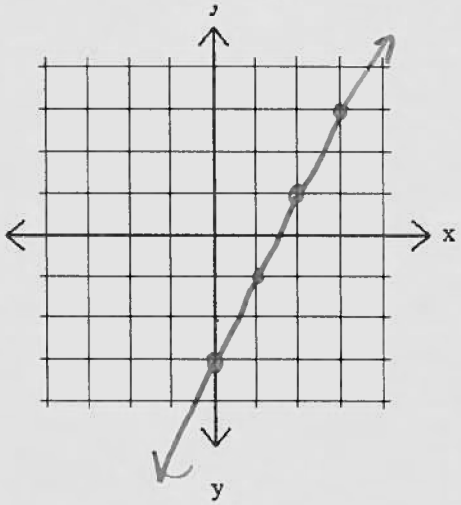
6.



Equation:

$x = 2$

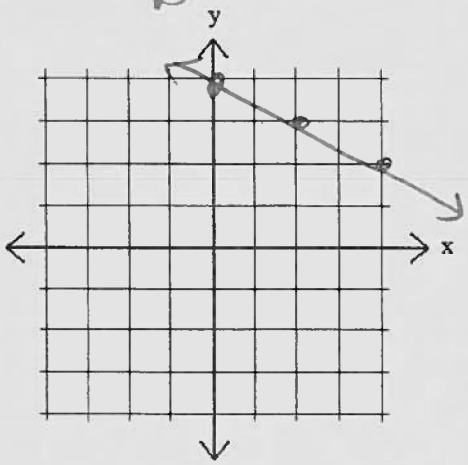
7.



Equation:

$y = 2x - 3$

8.



Equation:

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

Solve for y and find the Slope and the y-intercept

1. $4x + 5y = -13$
   Equation: $y = -\frac{4}{5}x - \frac{13}{5}$
   Slope: $-\frac{4}{5}$
   y-intercept: $-\frac{13}{5}$

$$\frac{5y}{5} = \frac{-4x}{5} - \frac{13}{5}$$

$$y = -\frac{4}{5}x - \frac{13}{5}$$

2. $6\left(\frac{x}{1} - \frac{3}{2}y + \frac{1}{3} = \frac{1}{1}\right)6$
   Equation: $y = \frac{6}{9}x - \frac{4}{9}$
   Slope: $\frac{6}{9} = \frac{2}{3}$
   y-intercept: $-\frac{4}{9}$

$$6x - \frac{18}{2}y + \frac{6}{3} = \frac{6}{1}$$

$$6x - 9y + 2 = 6$$

$$6x - 9y = 4$$

$$\frac{-9y}{-9} = \frac{-6x + 4}{-9}$$

3. $3x - 7y = -14$
   Equation: $y = \frac{3}{7}x + 2$
   Slope: $\frac{3}{7}$
   y-intercept: 2

$$\frac{-7y}{-7} = \frac{-3x}{-7} - \frac{14}{-7}$$

$$y = \frac{3}{7}x + 2$$

4. $-\frac{1}{6}x + y = 3$
   Equation: $y = \frac{1}{6}x + 3$
   Slope: $\frac{1}{6}$
   y-intercept: 3

$$y = \frac{1}{6}x + 3$$

5. $-2x - 6y + 9 = -21$
   Equation: $y = -\frac{1}{3}x + 5$
   Slope: $-\frac{1}{3}$
   y-intercept: 5

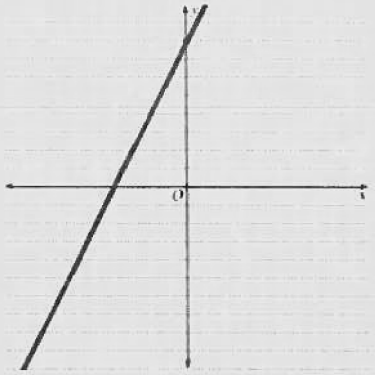
$$-2x - 6y = -30$$

$$\frac{-6y}{-6} = \frac{2x}{-6} - \frac{30}{-6}$$

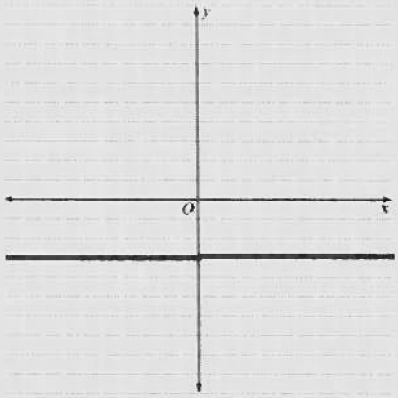
$$y = -\frac{1}{3}x + 5$$

Match the Graphs with the Equations

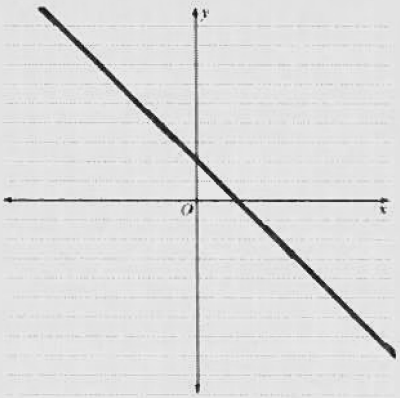
1. J.



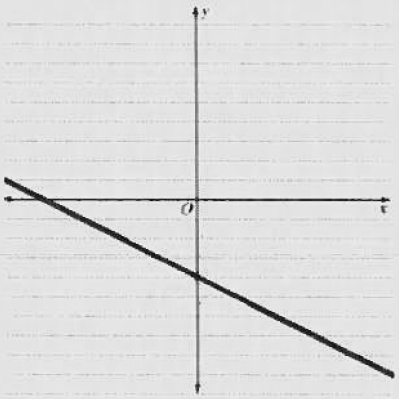
2. D



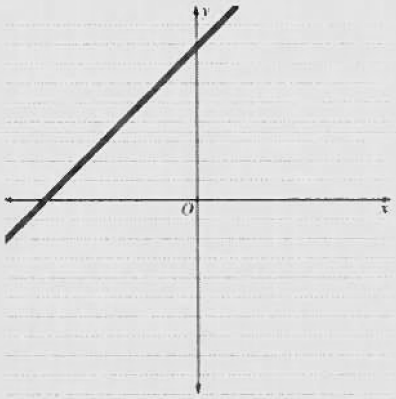
3. G



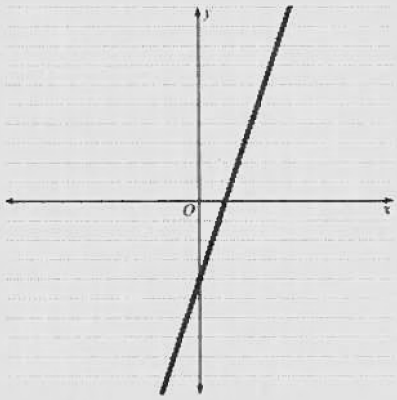
4. I



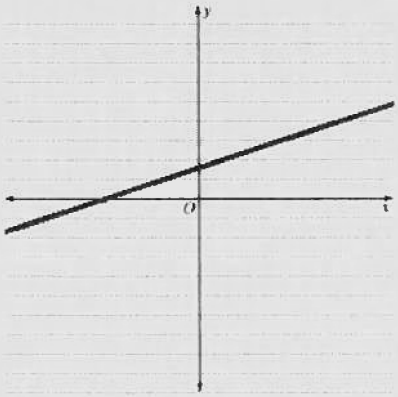
5. A



6. F



7. E.



a. $y = x + 8$ ~~b. $x = -3$~~ c. $3y + 2x = 5$

~~d. $y = -3$~~ ~~e. $y = \frac{1}{3}x + \frac{5}{3}$~~ ~~f. $2y = 6x - 8$~~

~~g. $4y - 8 = -4x$~~ ~~h. $y = -\frac{1}{2}x - 2$~~

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

$3y = -2x + 5$

$y = \frac{-2}{3}x + \frac{5}{3}$

$y = 3x - 4$

$y - 2x - 6 = 2$

$y = 2x + 8$

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

$y = -x + 2$