Name Key Hour _____ Date _____

Algebra I
Point-Slope Form Worksheet

Give an equation in point-slope form that satisfies the given information.

1. Passes through (2, 3) and has slope of $-\frac{1}{2}$.

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

2. Passes through (-1, 4) and m = 4.

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

3. Passes through (0, 2) and has slope of -5/3.

$y-2=-\frac{5}{3}(x-0)$

4. Passes through (4, -2) and m = 0.

$y+2=0(x-4)$

5. Passes through (-4, 6) and (-2, 5)

$\frac{6-5}{-4+2}=\frac{-1}{-2}=\frac{1}{2}$

$y-6=\frac{-1}{2}(x+4)$

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

6. Passes through (-1, -7) and (1, 3)

$\frac{-7-3}{-1-1}=\frac{-10}{-2}=5$

$y+7=5(x+1)$

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

Give the slope of each of the following lines. Name a point on each line.

7. $y + 2 = 2/3\ (x - 4)$

$m=\frac{2}{3}\ (4,-2)$

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

$m=\frac{1}{2}\ (3,3)$

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

$m=\frac{1}{4}\ (-2,-5)$

10. $Y = 2\ (x + 3)$

$m=2\ (-3,0)$

11. $y - 8 = -3\ (x + 1)$

$m=-3\ (-1,8)$

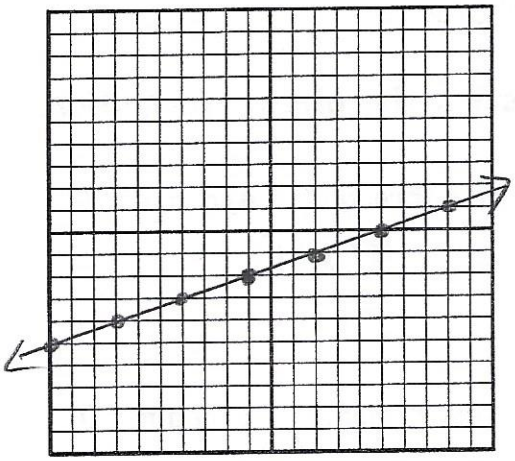
12. $Y + 3 = -1/5\ x$

$m=-\frac{1}{5}\ (0,-3)$

Graph each of the following lines by first giving the point and the slope.

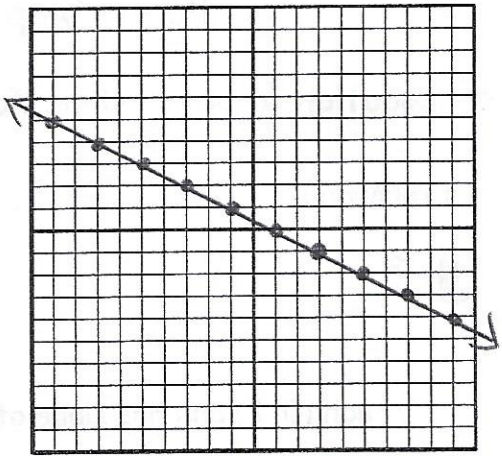
13. $y + 2 = 1/3\,(x + 1)$

Point $(-1, -2)$ Slope $\frac{1}{3}$



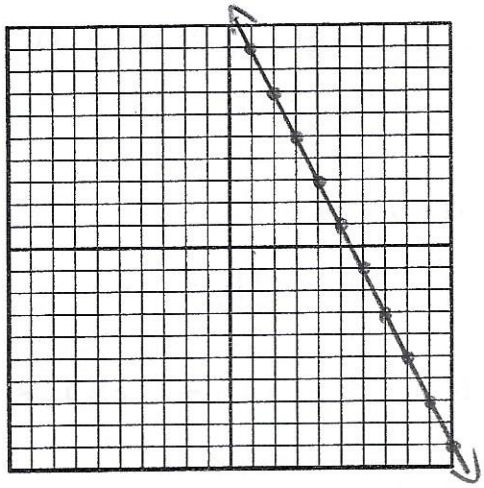
14. $y + 1 = -\frac{1}{2}(x - 3)$

Point $(3, -1)$ Slope $-\frac{1}{2}$



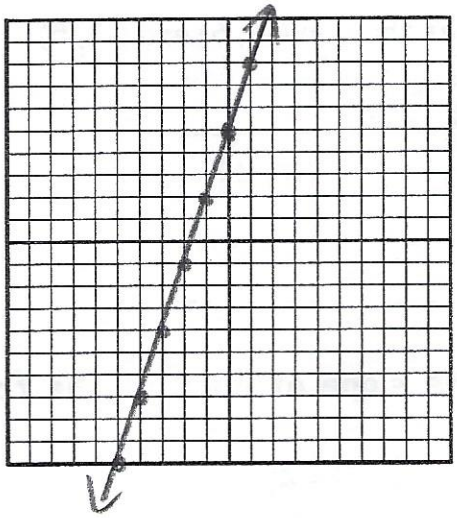
15. $y - 3 = -2\,(x - 4)$

Point $(4, 3)$ Slope -2



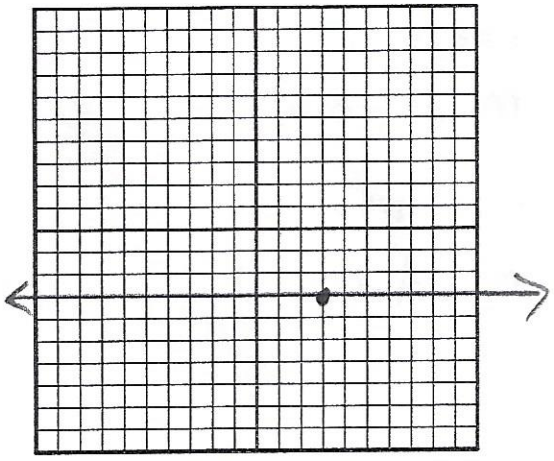
16. $y - 5 = 3x$

Point $(0, 5)$ Slope 3



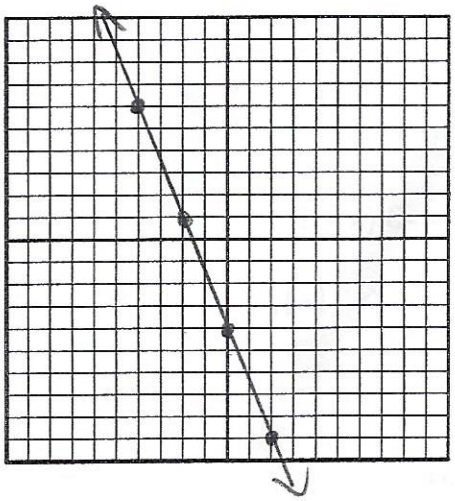
17. $y + 3 = 0\,(x - 3)$

Point $(3, -3)$ Slope 0



18. $y - 1 = -5/2\,(x + 2)$

Point $(-2, 1)$ Slope $-\frac{5}{2}$



Name_____ Date: _____ Period: ____

Point-Slope Form (Practice Worksheet)

Write an equation in point-slope form of the line that passes through the given point and has the given slope.

1. (2, 7); m = -4

$y-7=-4(x-2)$

2. (12, 5); m = -3

$y-5=-3(x-12)$

3. (4, -5); m = 6

$y+5=6(x-4)$

4. (-6, -2); m = 3

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

5. (7, -6); m = $\frac{1}{2}$

$y+6=\frac{1}{2}(x-7)$

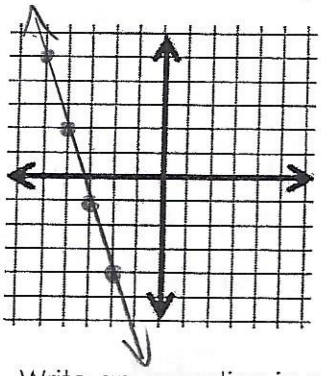
6. (-8, 2); m = $-\frac{3}{4}$

$y-2=\frac{-3}{4}(x+8)$

Graph the equations below.

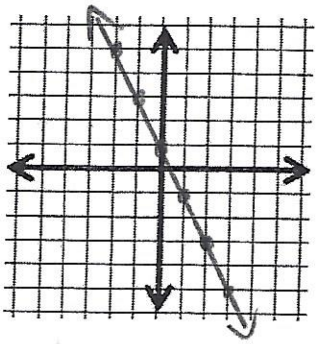
7. $y + 4 = -3(x + 2)$

$m=-3$ $(-2,-4)$



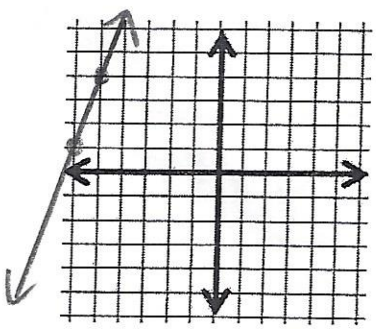
8. $y + 3 = -2(x - 2)$

$m=-2$ $(2,-3)$



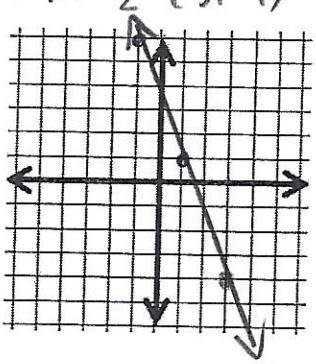
9. $y - 1 = 3(x + 6)$

$m=3$ $(-6,1)$



10. $y + 4 = \frac{-5}{2}(x - 3)$

$m=\frac{-5}{2}$ $(3,-4)$



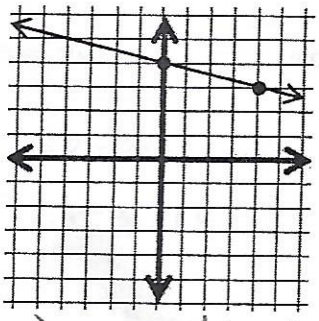
Write an equation in point-slope form of the line graphed below. (Use the right hand point)

11.

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

(0,4)

(4,3)



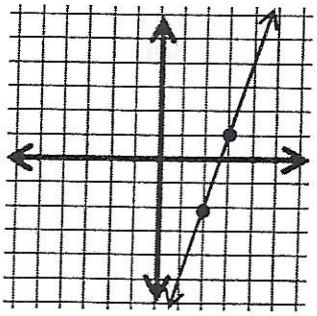
$y-4=-\frac{1}{4}(x-0)$, $y-3=-\frac{1}{4}(x-4)$

12.

$m=3$

(2,-2)

(3,1)



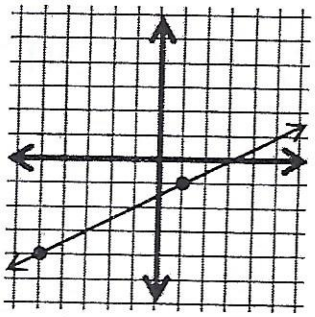
$y-1=3(x-3)$, $y+2=3(x-2)$

13.

$m=\frac{1}{2}$

(1,-1)

(-5,-4)



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

Write an equation in point-slope form of the line that passes through the two points given. Use the first point to write the equation.

14. (4,7) and (5, 1)

$\frac{7-1}{4-5}=\frac{6}{-1}=-6$

$y-7=-6(x-4)$

$y-1=-6(x-5)$

15. (9, -2) and (-3, 2)

$\frac{-2-2}{9+3}=\frac{-4}{12}=\frac{-1}{3}$

$y+2=-\frac{1}{3}(x-9)$

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

16. (3, -8) and 7(-2)

$\frac{-8+2}{3-7}=\frac{-6}{-4}=\frac{3}{2}$

$y+8=\frac{3}{2}(x-3)$

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