Name Key HW 3.4 Point-Slope Form Hour_____

In Exercises 1–6, write an equation in point-slope form of the line that passes through the given point and has the given slope.

1. (3, 4) m = 3

$y-4=3(x-3)$

2. (-6, 1) m = -4

$y-1=-4(x+6)$

3. (0, -2) m = $\frac{4}{5}$

$y+2=\frac{4}{5}x$

4. (-1, -3) m = $-\frac{1}{3}$

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

5. (4, 0) m = 2

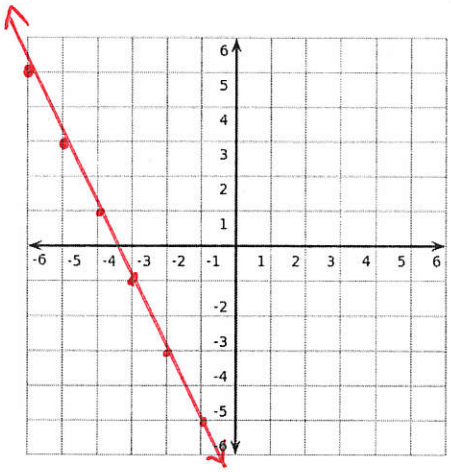
$y=2(x-4)$

6. (-1 , 1) m = $\frac{1}{3}$

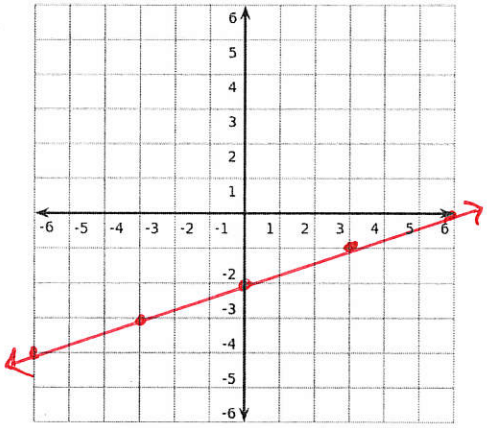
$y-1=\frac{1}{3}(x+1)$

In exercises 7-9, graph the line given a point on the line and the slope.

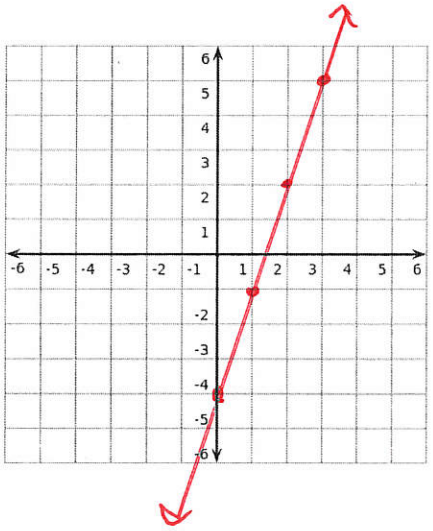
7. (-6, 5) m = - 2



8. (3, -1) m = $\frac{1}{3}$



9. (0, - 4) m = 3



In exercises 10-12, give the slope of the following lines, then name a point on each line.

10. $y+6=\frac{5}{6}(x+1)$

Slope = $\frac{5}{6}$

Point (-1 , -6)

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

Slope = $-\frac{2}{5}$

Point (-2 , 3)

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

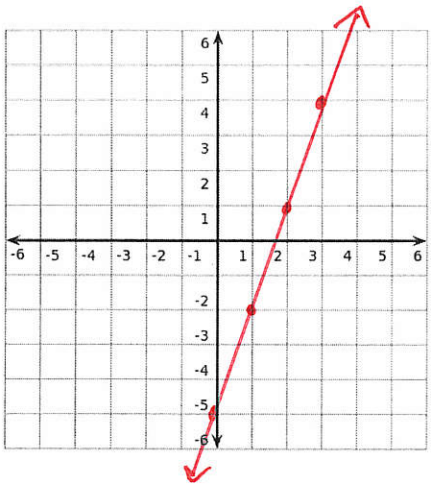
Slope = $-\frac{1}{2}$

Point (5 , 0)

In exercises 13-14, graph the lines given the equation in point-slope form

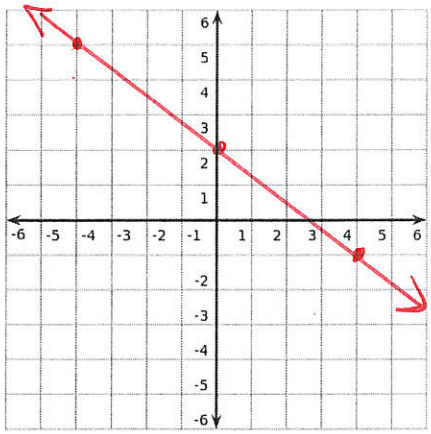
13. $y + 2 = 3(x - 1)$

$(1, -2)$



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

$(-4, 5)$



In exercises 15-16, write an equation of the line in point-slope form that passes through the given points

15. (-1, -2) and (2, 4) $m = \frac{4+2}{2+1} = \frac{6}{3} = 2$

$y+2=2(x+1)$ OR $y-4=2(x-2)$

16. (3, 0) and (-8, 1) $m = \frac{1-0}{-8-3} = \frac{1}{-11}$

$y=-\frac{1}{11}(x-3)$ OR $y-1=-\frac{1}{11}(x+8)$

In Exercises 17–20, convert the equation from point-slope form to slope-intercept form.

17. $y + 6 = -2(x - 4)$

$y+6=-2x+8$

$-6 \quad -6$

$y=-2x+2$

18. $y + 7 = 4(x + 3)$

$y+7=4x+12$

$-7 \quad -7$

$y=4x+5$

19. $y - 8 = \frac{1}{3}(x + 9)$

$y-8=\frac{1}{3}x+3$

$+8 \quad +8$

$y=\frac{1}{3}x+11$

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

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

$+1 \quad +1$

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

21. Is $y - 4 = 3(x + 1)$ an equation of a line through $(\overset{x}{-2}, \overset{y}{1})$? Explainp

$1-4=3(-2+1)$

$-3=3(-1)$

$-3=-3$ ✓

Yes!

Plug in -2 for x and 1 for y. You get a true statement.