

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

Find a Point-Slope equation for a line containing the given point and having the given slope.

1. (4, -3),  $m = -1$

$$y - -3 = -1(x - 4)$$

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

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

$$y - -6 = 2(x - -5)$$

$$y + 6 = 2(x + 5)$$

3. (-7, 2),  $m = 3$

$$y - 2 = 3(x - -7)$$

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

4. (3, 5),  $m = -2$

$$y - 5 = -2(x - 3)$$

Two points on a line are given. Write the equation in point-slope form and then change it to slope-intercept form. Find  $m$  1<sup>st</sup>

11. (0, 8) and (-1, 10)  $m = \frac{10 - 8}{-1 - 0} = \frac{2}{-1} \boxed{m = -2}$

12. (-6, 8) and (4, 8)

$$m = \frac{8 - 8}{4 - -6} = \frac{0}{10} \boxed{m = 0}$$

pt. slope:  $y - 8 = -2(x - 0)$  or  $y - 10 = -2(x - -1)$

$$y - 8 = -2x$$

$$y - 10 = -2(x + 1)$$

pt. slope:  $y - 8 = 0(x + 6)$  OR  $y - 8 = 0(x - 4)$

$$y - 8 = 0$$

$$y - 8 = 0$$

sl. int:  $y = -2x + 8$

sl. int:  $y = 8$

13. (4, 5) and (-3, 8)

14. (0, 9) and (2, 0)

$$m = \frac{8 - 5}{-3 - 4} = \frac{3}{-7} \boxed{\frac{3}{-7}}$$

$$m = \frac{0 - 9}{2 - 0} = \frac{-9}{2} \boxed{\frac{-9}{2}}$$

pt. slope:  $y - 5 = -\frac{3}{7}(x - 4)$  OR  $y - 8 = -\frac{3}{7}(x + 3)$

$$y - 5 = -\frac{3}{7}x + \frac{12}{7}$$

$$y - 8 = -\frac{3}{7}x - \frac{9}{7}$$

pt. slope:  $y - 9 = -\frac{9}{2}(x - 0)$  OR  $y - 0 = -\frac{9}{2}(x - 2)$

$$y - 9 = -\frac{9}{2}x$$

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

sl. int:  $y = -\frac{3}{7}x + \frac{47}{7}$

sl. int:  $y = -\frac{9}{2}x + 9$

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

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

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

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

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

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

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

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

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

10.  $y = 2(x + 3)$

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

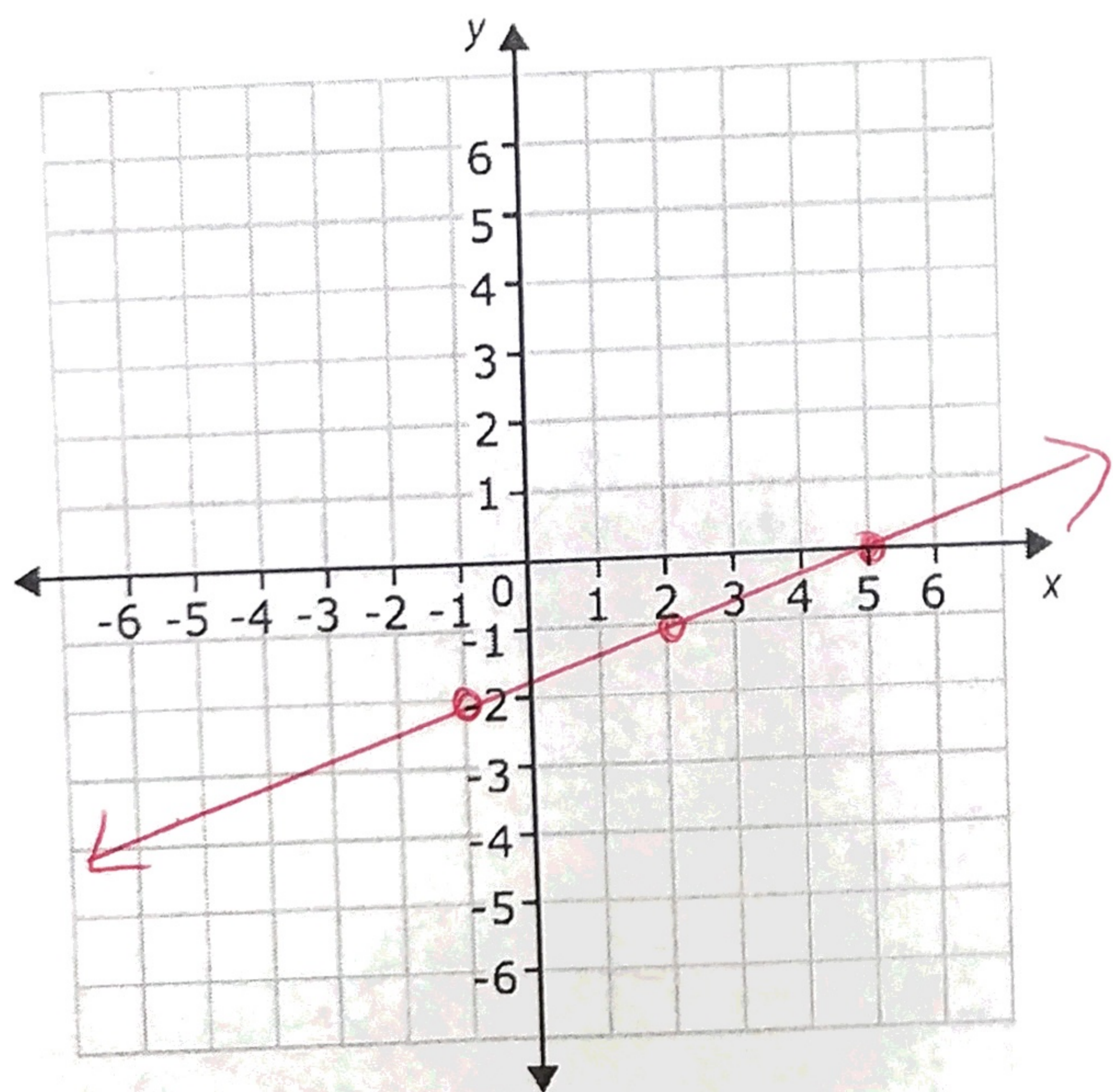
12.  $y + 3 = -\frac{1}{5}x$

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

Graph the following linear functions from point slope form.

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

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



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

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

