

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

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## Section 7.3 Extra Practice

$$21 = \frac{1}{1}$$

1. Rewrite each equation from slope-point form to slope-intercept form,  $y = mx + b$ , and general form,  $Ax + By + C = 0$ .

a)  $y - 4 = 5(x - 3)$

$$y = 5x - 11$$

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

$$y + 3/5 = 2x - 3$$

$$y = 2x - 18/5$$

$$10x - 5y - 18 = 0$$

4. Use slope-point form to determine an equation of a line through each pair of points. Express each equation in the form  $y = mx + b$  and in the form  $Ax + By + C = 0$ .

a) (6, 3) and (1, -2)

b) (0, 5) and (6, 3)

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

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

$$y - 3 = 0$$

$$y - 5 = -1/3(x - 0)$$

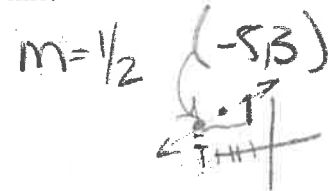
$$y - 3 = -1/3(x - 6)$$

$$0 = x + 3y - 15$$

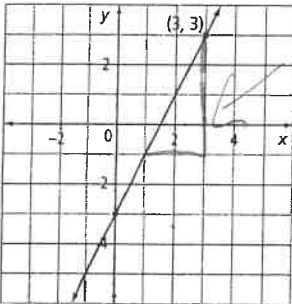
$$x + 3y - 15 = 0$$

5. Identify the slope and one point on the line. Sketch a graph of each line.

a)  $y - 3 = \frac{1}{2}(x + 5)$



2. Write an equation in slope-point form,  $y - y_1 = m(x - x_1)$ , of each line passing through the given point.



a)

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

6. What is the equation of each line in slope-point form? Convert each equation to general form.

- a) x-intercept of -5 and y-intercept of 4

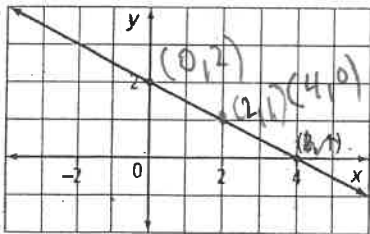
$$y - 0 = \frac{4}{5}(x + 5)$$

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

$$0 = 4x - 5y + 20$$

$$4x - 5y + 20 = 0$$

b)



- b) same slope as  $2x - 5y + 6 = 0$  and through the origin

$$y - 0 = -1/2(x - 0)$$

$$y = -1/2x$$

$$0 = 2x - 5y$$

$$2x - 5y = 0$$

3. Determine the equation of the line using the slope-point form. Then, express each equation in slope-intercept form and in general form.

a) (-3, 4),  $m = -5$

$$y - 4 = -5(x + 3)$$

$$y = -5x - 11$$

$$0 = 5x + y + 11$$

$$5x + y + 11 = 0$$