4.7

Writing Equations in Point-Slope Form

DO NOW

Write an equation of the line that passes through (-2, 2) and (0,8) .

POINT-SLOPE FORM of a Linear Equation

To use the point-slople form, you need two things:

m = the slope

(x_1, y_1) = any given point

Example

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

a) Write an equation in point-slope form of the line that passes through the point (-2,4) with a slope of 3.

Example

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

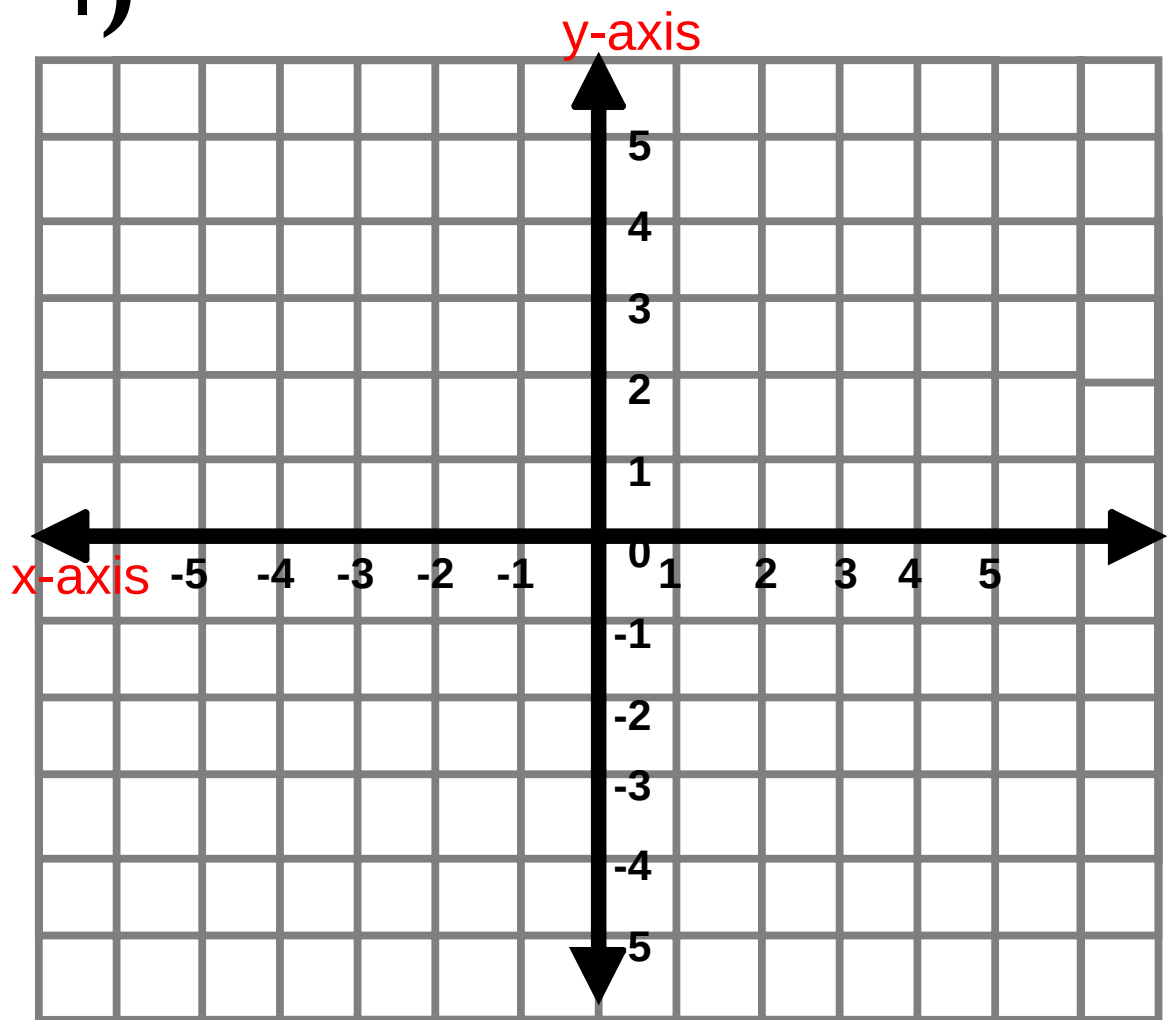
b) Write an equation in point-slope form of the line that passes through the point (5,-2) with a slope of -4.

Example

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

c) Graph the equation

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

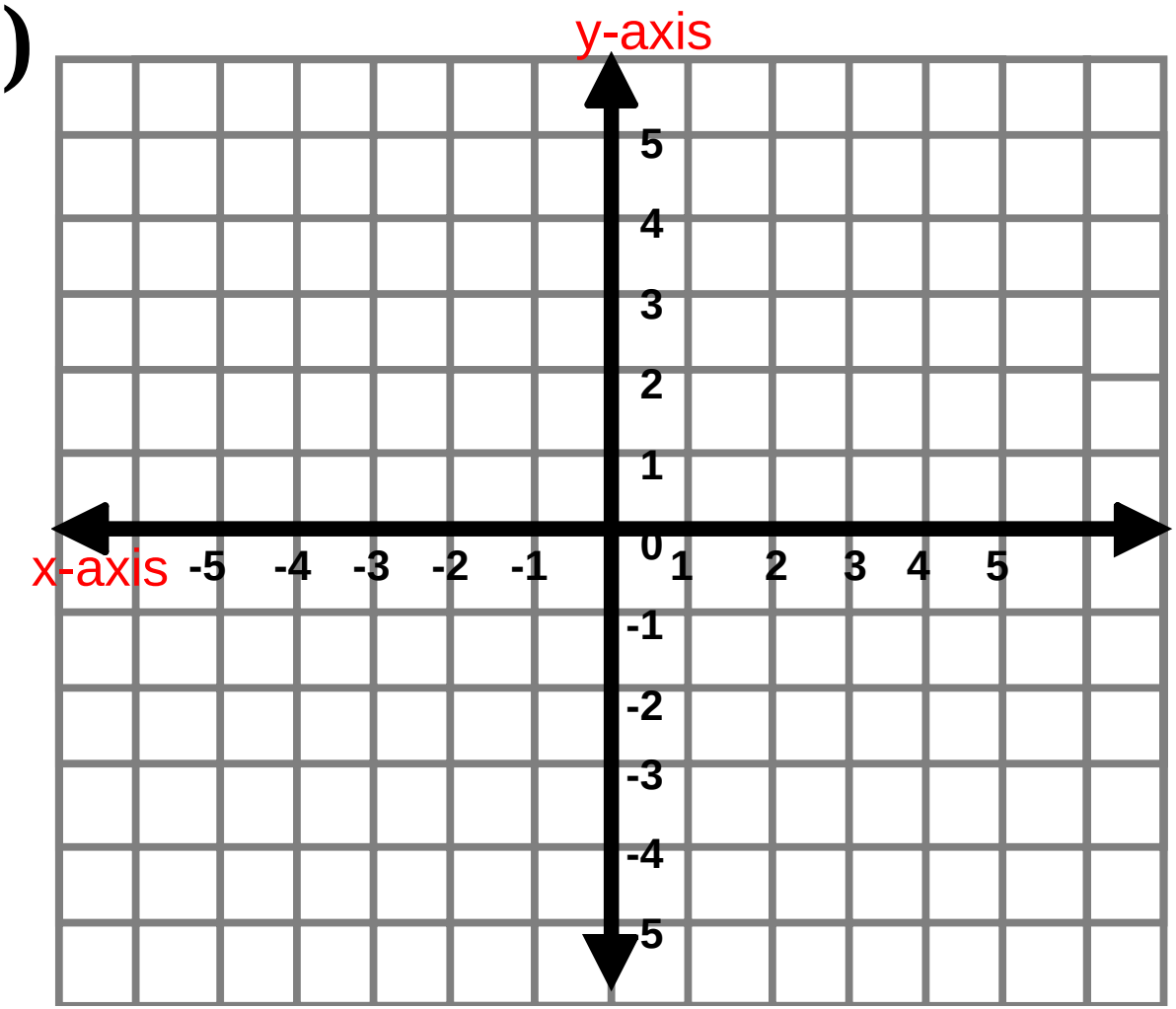


Example

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

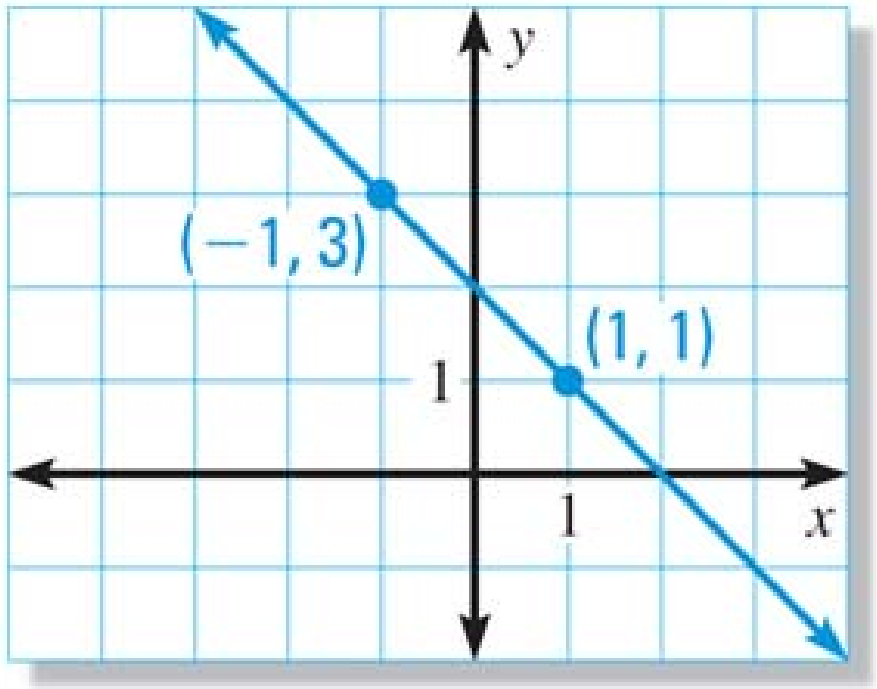
d) Graph the equation

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



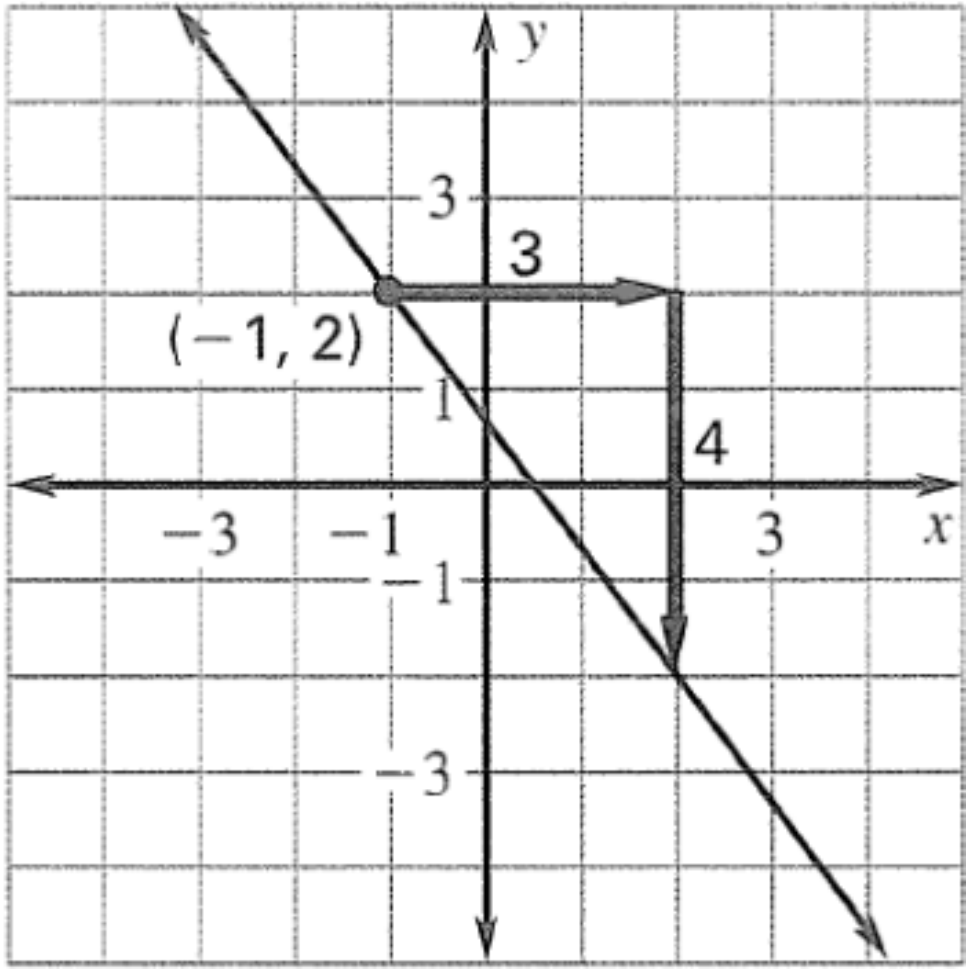
Example

e) Write an equation of the line the graph in point-slope form.



Example

f) Write an equation of the line the graph in point-slope form.



Practice

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

1. $(1, 9); m = -3$

Practice

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

2. $(4, -10); m = 2$

Practice

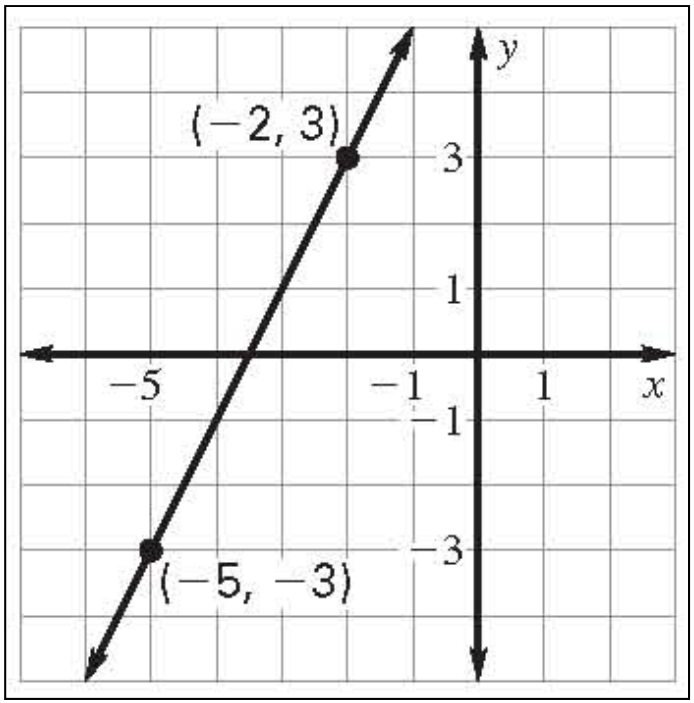
Write an equation in point-slope form of the line that passes through the given point and has the given slope *m*.

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

Practice

Write an equation in point-slope form of the line shown.

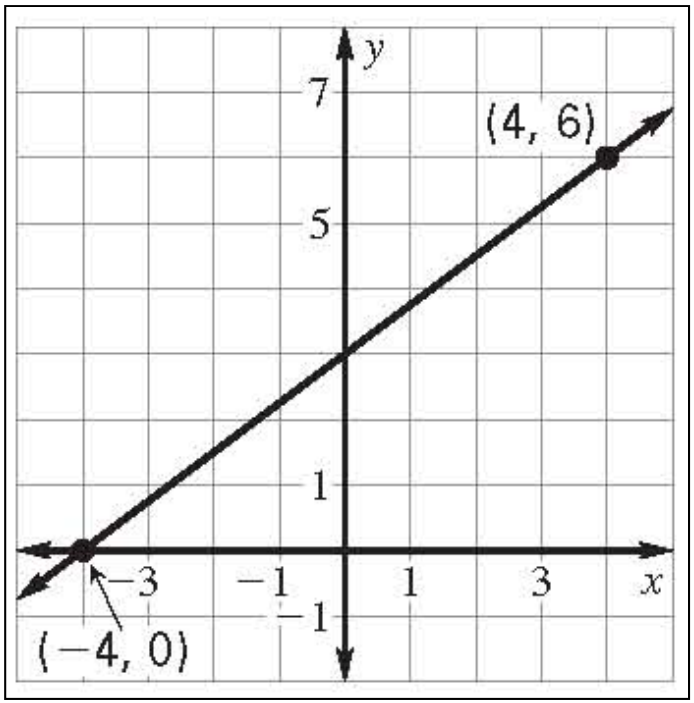
4)



Practice

Write an equation in point-slope form of the line shown.

5)



Example

6) Write in slope-intercept form the equation of the line that passes through the points (4,8) and (-4,2).

Example

7) Write in slope-intercept form the equation of the line that passes through the points (-1, -1) and (1, 5).

Practice

8) Write in slope-intercept form the equation of the line that passes through the points (-2, 3), (2, 7).

Practice

9) Write in slope-intercept form the equation of the line that passes through the points (1, -2), (-5,4).