

Writing Equations Using Point-Slope Form

Worksheet

Point-Slope Form

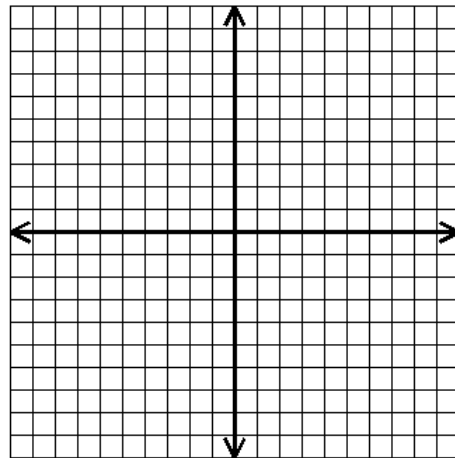
$$y - y_1 = m(x - x_1)$$

1. Write an equation in point-slope form of the line that passes through the point (1, 2) and has a slope of 4.
2. Write an equation in point-slope form of the line that passes through the point (-7, 3) and has a slope of $\frac{1}{2}$.
3. Write an equation in point-slope form of the line that passes through the point (-2, -5) and has a slope of -12.

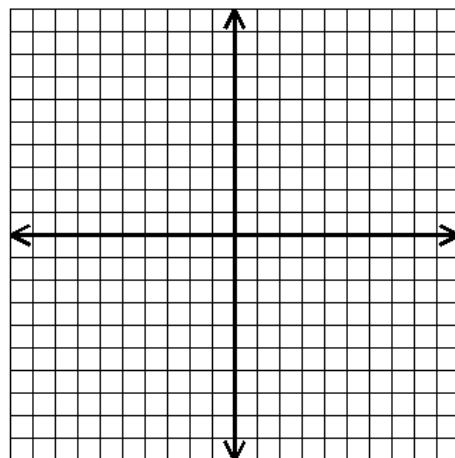
4. Graph the equation $y - 2 = 3(x + 1)$

Step 1: Plot point (-1, 2)

Step 2: Apply slope to get another point.



5. Graph the equation $y + 4 = \frac{3}{4}(x + 2)$

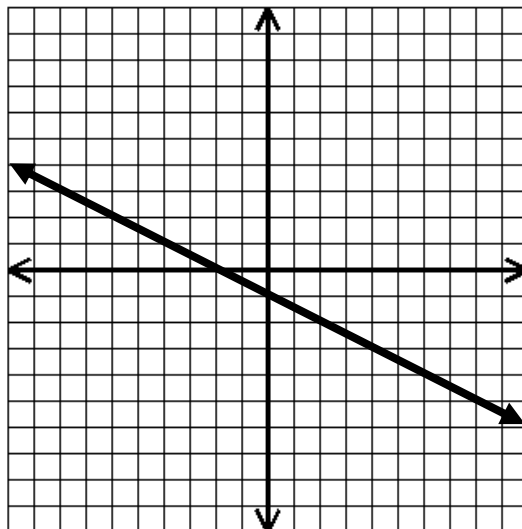


6. Write an equation in point-slope form for the line given.

Step 1: Identify one point on line: _____

Step 2: Calculate slope: _____

Step 3: Write equation:



Convert the following equations from point-slope form into slope-intercept form.

7. $y + 4 = 2(x - 1)$

8. $y - 2 = -3(x - 6)$

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

Write an equation in point-slope form given two points on a line.

Example: (-2, 5) and (2, -3)

Step 1: Calculate slope.

$$m = \frac{-3 - 5}{2 - (-2)} = \frac{-8}{4} = -2$$

Step 2: Plug slope and one of the points into point-slope formula.

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

10. (-1, -7) and (2, 5)