3.3.10 - Point-Slope form

Point-Slope form

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

m = slope

ordered pair = (x_1, y_1) 1 point on the line

Example 1:

A line has a slope of -3 and contains the point (2, 6). (x_1, y_1)

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

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

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

Example 2:

A line has a slope of 4 (m = 4) and contains the point (3, -5). (x_1, y_1)

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

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

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

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

Example 3:

A line has a slope of $-\frac{1}{2}$ and contains the point (-1, -7).

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

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

$y + 7 = -\frac{1}{2}(x + 1)$

Example 4:

Given the equation,

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

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

What is the slope of the line?

What is an ordered pair on the line?

slope: m = -2

ordered pair: (x_1, y_1) (3, 6)

Example 5:

Given the equation,

$y - 4 = \frac{1}{2}(x + 10)$

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

What is the slope of the line?

What is an ordered pair on the line?

slope: $\frac{1}{2}$

ordered pair: (x_1, y_1) (-10, 4)

Example 6:

Given the equation,

$y + 4 = 8(x + 2)$

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

What is the slope of the line?

What is an ordered pair on the line?

slope: 8

ordered pair: (-2, -4)

Example 7:

Given the equation,

$y = -2(x + 3)$

$y - 0 = -2(x + 3)$

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

What is the slope of the line?

What is an ordered pair on the line?

slope: -2

ordered pair: (-3, 0)