Algebra RH HW #

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

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

$x_1\ y_1$

1. (6, 2), $m = \frac{2}{9}$

$y - 2 = \frac{2}{9}(x - 6)$

$x_1\ y_1$

2. (1, 3), $m = 1$

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

$x_1\ y_1$

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

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

$x_1\ y_1$

4. (-7, 4), $m = 1$

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

$x_1\ y_1$

5. (9, -5), $m = -6$

$y + 5 = -6(x - 9)$

Give the Point-Slope form of the equation that passes through the given points.

$x_1\ y_1 \quad x_2\ y_2$

6. (1, 5) and (4, 2)

$\frac{\Delta y}{\Delta x} = \frac{2-(5)}{4-(1)} = \frac{-3}{3} = -1$

$m = -1$

$y - 5 = x + 1$

$y - 2 = x - 4$

$x_1\ y_1 \quad x_2\ y_2$

7. (-4, 2) and (1, -3)

$\frac{\Delta y}{\Delta x} = \frac{-3-(2)}{1-(-4)} = \frac{-5}{5} = -1$

$m = -1$

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

or

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

8. (-5, -3) and (1, -1)

$\frac{\Delta y}{\Delta x} = \frac{-1-(-3)}{1-(-5)} = \frac{2}{6} = \frac{1}{3}$

$m = \frac{1}{3}$

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

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

9. (0, 3) and (-2, 6)

$\frac{\Delta y}{\Delta x} = \frac{6-(3)}{-2-(0)} = \frac{+3}{-2} = -\frac{3}{2}$

$m = -\frac{3}{2}$

$y - 3 = -\frac{3}{2}x$

$y - 6 = -\frac{3}{2}(x + 2)$

10. (-8, 3) and (-4, 1)

$\frac{\Delta y}{\Delta x} = \frac{1-(3)}{-4-(-8)} = \frac{-2}{4} = -\frac{1}{2}$

$m = -\frac{1}{2}$

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

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