

Objective: Write the equation of a line in slope point form.

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

$$\frac{m}{1} = \frac{y_2 - y_1}{x_2 - x_1}$$

$$1(y_2 - y_1) = m(x_2 - x_1)$$

$$y_2 - y_1 = m(x_2 - x_1)$$

$$\boxed{y - y_1 = m(x - x_1)}$$

Ex. 1

given $m = \frac{2}{3}; (6, 5)$

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

point - slope form $(y - 5) = \frac{2}{3}(x - 6)$

Ex. 2 Crickets warmup

$$(124, 68) \quad (172, 80)$$

$$m = \frac{80 - 68}{172 - 124} = \frac{12}{48} = \frac{1}{4}$$

$$\boxed{y - 68 = \frac{1}{4}(x - 124)}$$

1. $m = \frac{1}{2}; (0, 4)$

$$y - 4 = \frac{1}{2}(x - 0)$$

2. $m = -3; (-2, 4)$

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

3. $m = -\frac{1}{3}; (-6, 3)$

$$y - 3 = -\frac{1}{3}(x + 6)$$

4. $m = 5; (-2, -5)$

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

5. $m = -\frac{4}{3}; (-9, 8)$

$$y - 8 = -\frac{4}{3}(x + 9)$$

6. $m = \frac{2}{5}; (5, 10)$

$$y - 10 = \frac{2}{5}(x - 5)$$

7. $m = \frac{2}{5} \quad (1, 7)$

$$y - 7 = \frac{2}{5}(x - 1)$$

8. $m = \frac{1}{2} \quad (-5, -3)$

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

9. $m = 0 \quad (1, 6)$

$$y - 6 = 0(x - 1)$$

$$\boxed{y = 6}$$

10. $m = \text{undefined} \quad (-4, 3)$

$$\boxed{x = -4}$$