

Three forms

$$y = mx + b$$

↑ slope    ↑ y intercept

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

↑ slope    point (x, y)

$Ax + By + C = 0$  (General)  
\* have to rearrange for slope

Convert point-slope to General

1)  $y - 5 = -2(x + 1)$

$Ax + By + C = 0$   
\* A B + C are integers & A is positive

$$y - 5 = -2x - 2$$

$$2x + y - 5 + 2 = 0$$

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

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

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

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

$$-2\left(-\frac{1}{2}x + y + 5 = 0\right)$$

$$x - 2y - 10 = 0$$

3.  $(y + 2) = \frac{3}{4}(x + 1)$

4  $\left(y + 2 = \frac{3}{4}x + \frac{3}{4}\right)$

$$4y + 8 = 3x + 3$$

$$0 = 3x - 4y + 3 - 8$$

$$0 = 3x - 4y - 5$$

$$3x - 4y - 5 = 0$$

$$\frac{4}{1} \cdot \frac{3}{4} = \frac{12}{4} = 3$$

pg. 238  
#46

pg. 240  
#50, 51, 53  
55a, b