

1. Find the **slope** of the line that passes through the pair of points.

(3,-7) and (-2,-9)

$$m = \frac{-9 - (-7)}{-2 - 3} = \frac{-2}{-5} = \frac{2}{5}$$

$$m = \frac{2}{5}$$

2. Put in slope-intercept form and state the slope and y-intercept.

$$y - 8 = \frac{5}{2}(x + 7)$$

$$y - 8 = \frac{5}{2}x + \frac{35}{2} + \frac{8 \cdot 2}{1 \cdot 2}$$

$$y = \frac{5}{2}x + \frac{51}{2}$$

$$m = \frac{5}{2} \quad b = \frac{51}{2}$$

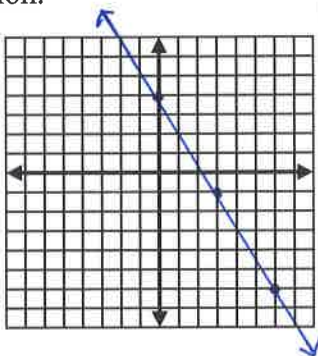
3. Write an equation of a line with the given slope and y-intercept.

$$m = -\frac{1}{4}, b = 3$$

$$y = -\frac{1}{4}x + 3$$

4. Use the slope and y-intercept to graph the equation.

$$y = -\frac{5}{3}x + 4$$



6. Write an equation for the line that is **parallel** to the given line and passes through the given point.

$$y = -3x + -2; (-5, 8) \quad m_{\parallel} = -3$$

$$8 = -3(-5) + b$$

$$8 = 15 + b$$

$$-15 \quad -15$$

$$-7 = b$$

$$y = -3x - 7$$

7. Find the rate of change: A plant measures 4 cm on day 1 and 15 cm on day 4

$$\text{rate of change} = \frac{15 - 4}{4 - 1} = \frac{11}{3}$$

$$\frac{11 \text{ cm}}{3 \text{ days}}$$

8. Write the equation of the line in slope-intercept form that passes through (9,-1) and (7,5).

$$m = \frac{5 - (-1)}{7 - 9} = \frac{6}{-2} = -3$$

$$5 = -3(7) + b$$

$$5 = -21 + b$$

$$+21 \quad +21$$

$$b = 26$$

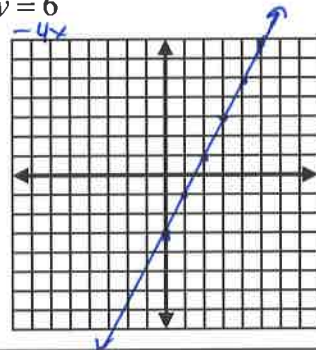
$$y = -3x + 26$$

9. Graph $4x - 2y = 6$

$$-2y = -4x + 6$$

$$\frac{-2y}{-2} = \frac{-4x}{-2} + \frac{6}{-2}$$

$$y = 2x - 3$$



5. Graph the equation **using x- and y-intercepts**.

$$2x - 4y = -8$$

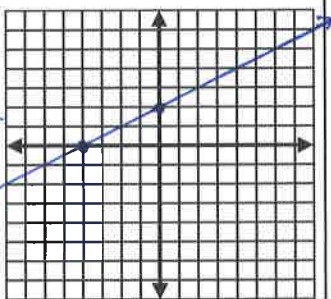
Work:

$$y = 0 \quad x = 0$$

$$2x = -8 \quad -4y = -8$$

$$x = -4 \quad y = 2$$

$$(-4, 0) \quad (0, 2)$$



10. Write the equation of a line in slope-intercept form **perpendicular** to $y = 4x - 1$ passing through (12,-2).

$$m_{\perp} = -\frac{1}{4}$$

$$-2 = -\frac{1}{4}(12) + b$$

$$-2 = -3 + b$$

$$+3 \quad +3$$

$$1 = b$$

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

