Q4: Write the equation in slope-intercept form of the line that is **perpendicular to** the graph of each equation and passes through the given point.

1. $y = -5x + 1; (2, -1)$

$$-1 = \frac{1}{5}(2) + b$$
$$-1 = \frac{2}{5} + b$$
$$\underline{-2/5 \quad -2/5}$$
$$-1\frac{2}{5} = b$$

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

2. $y = 2x - 3; (-5, 3)$

$$3 = -\frac{1}{2}(-5) + b$$
$$3 = \frac{5}{2} + b$$
$$\underline{-\frac{5}{2} \quad -\frac{5}{2}}$$
$$\frac{1}{2} = b$$

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

$$\frac{5}{2} = 2\frac{1}{2}$$

3. $y = -4x - 2; (4, -4)$

$$-4 = \frac{1}{4}(4) + b$$
$$-4 = 1 + b$$
$$\underline{-1 \quad -1}$$
$$-5 = b$$

$$y = \frac{1}{4}x - 5$$

4. $7y + 4x = 3; (-4, -7)$

$$\underline{-4x \quad -4x}$$
$$\frac{7y}{7} = \frac{-4x}{7} + \frac{3}{7}$$
$$y = -\frac{4}{7}x + \frac{3}{7}$$
$$-7 = \frac{7}{4}(-4) + b$$
$$-7 = -7 + b$$
$$\underline{+7 \quad +7} \Rightarrow 0 = b$$
$$0 = b$$

$$y = \frac{7}{4}x + 0$$
$$y = \frac{7}{4}x$$

Note: This worksheet is supported by a flash presentation, under Mausmi's Math Movies.

Mausmi Jadhav