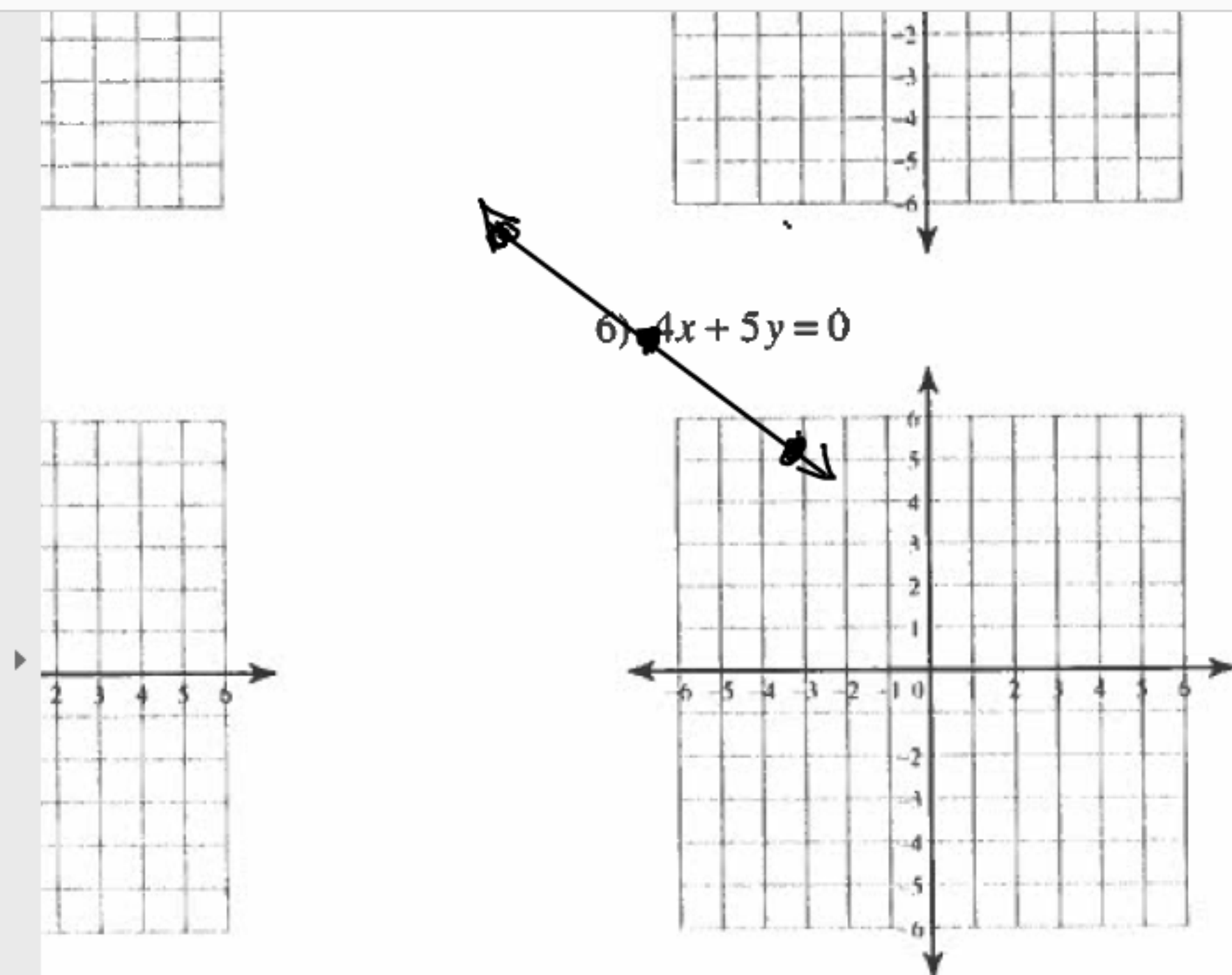




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Writing the Equation of a Line

Method 1: When you know the y-intercept, use the Slope-Intercept Form, $y = mx + b$

1. Identify the **y-intercept (b)** and **slope (m)**
2. Write the equation replacing the b and m

Method 2: When you have 2 points, neither which are the y-intercept, you can use Slope-Point form

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

1. Use the 2 points to **calculate** the slope (**m**)
2. Sub in **m** and **a point for (x₁, y₁)** into the Slope-point form
3. Reorder the equation into Slope-Intercept form OR Standard form

Method 3: When you have 2 points, neither which are the y-intercept, you can use Slope-Intercept Form, $y = mx + b$

1. Use the 2 points to **calculate** the slope (**m**)
2. Sub in **m** and **a point for (x, y)**
3. Solve for b
4. Write the equation replacing the b and m

Course: Grade 10 Mathematics

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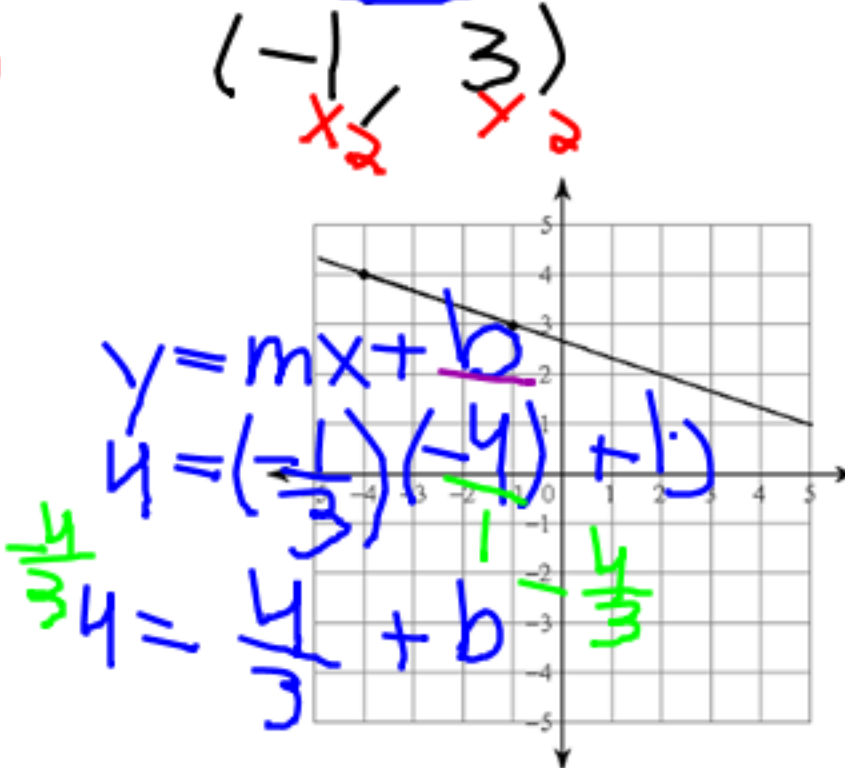
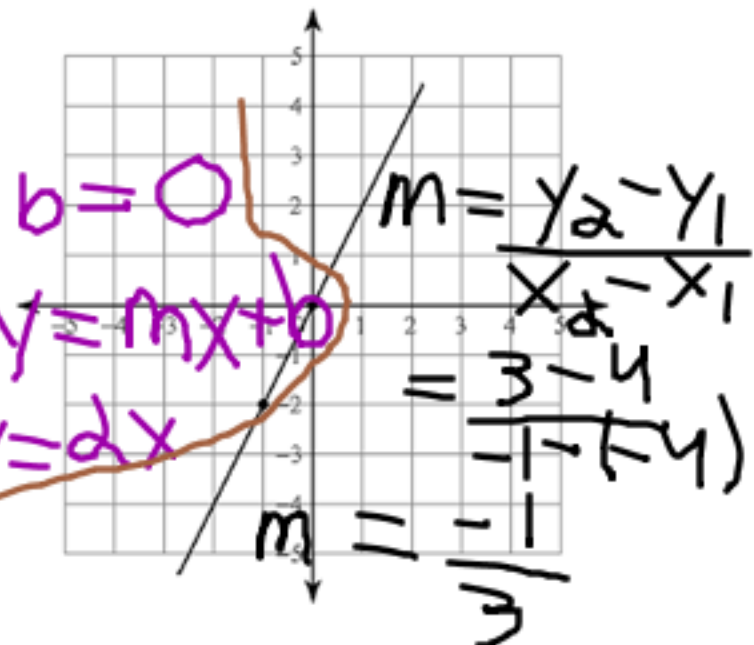
$$\begin{matrix} x_1 & y_1 \\ (-1, -2) \\ x_2 & y_2 \\ (0, 0) \end{matrix}$$

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

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

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

Examples:



$$\frac{1}{3/5} + \frac{4 \overset{\times 3}{\cancel{1}}}{\underset{\times 3}{\cancel{3}}} = b$$

$$\frac{1}{3/5} + \frac{12}{3} = b$$

$$\frac{8}{3} = b$$

$$y = \frac{1}{3/5}x + \frac{8}{3}$$

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$(-2, 4)$
 $(0, 1)$
 x_2 x_2

