Isabella Montinaro
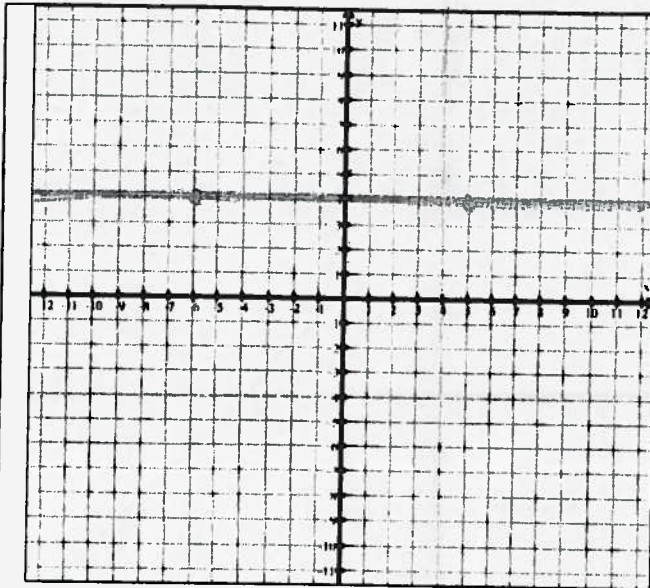
# Writing Equations of Lines (Continued)

For each of the following questions:
1. Plot the points on the given grid.
2. Draw a line connecting the points and extend the line in both directions to the edg the graph.
3. Calculate the slope (rate of change) using the formula. Compare your answer wi your graph.
4. Using the graph state the y-intercept.
5. Write the equation of the line in slope y-intercept form.
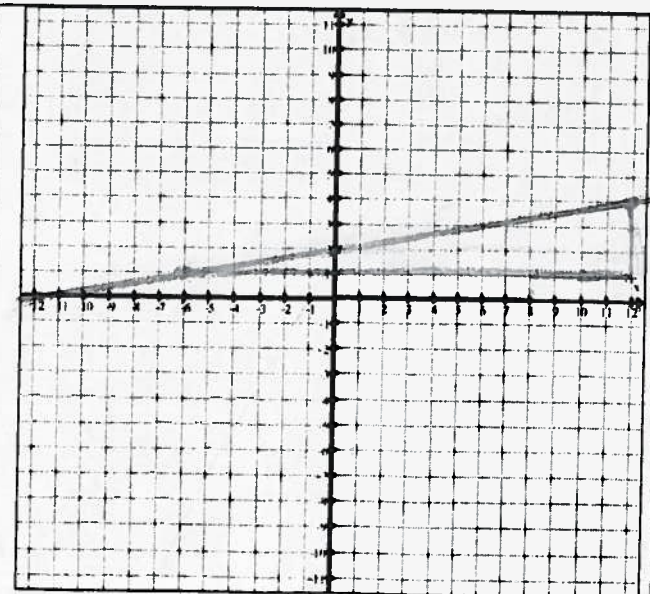6. Verify your equation using a graphing calculator.



5. A (-6, 4) B (5, 4)

$$Slope = \frac{Rise}{Run}$$

y-intercept = 4

Equation: $y = 4$



6. A (-6, 1) B (12, 4)

$$Slope = \frac{Rise}{Run}$$

$$= \frac{3}{18}$$

$$= \frac{4-1}{12+6} = \frac{3}{18} = \frac{1}{6}$$

$$y = \frac{1}{6}x + b \quad Sub \ In$$

$$4 = \frac{1}{6}(12) + b$$

$$4 = 2 + b$$
$$4 - 2 = b$$
$$b = 2$$

y-intercept = 2

Equation: $y = \frac{3}{18}x + 2$

$$y = \frac{1}{6}x + 2$$

# Writing Equations of Lines

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4. Using the graph-state the y-intercept.
5. Write the equation of the line in slope y-intercept form.
6. Verify your equation using a graphing calculator.
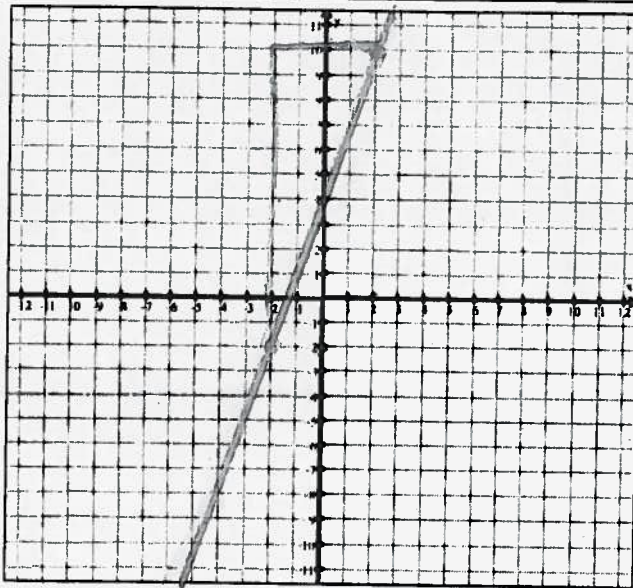


**3. A (-2, -2) B (2, 10)**

$$Slope = \frac{Rise}{Run} = \frac{10-(-2)}{2-(-2)} = \frac{12}{4} = 3$$

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

$$y = 3x + b$$
$$10 = 3(2) + b$$
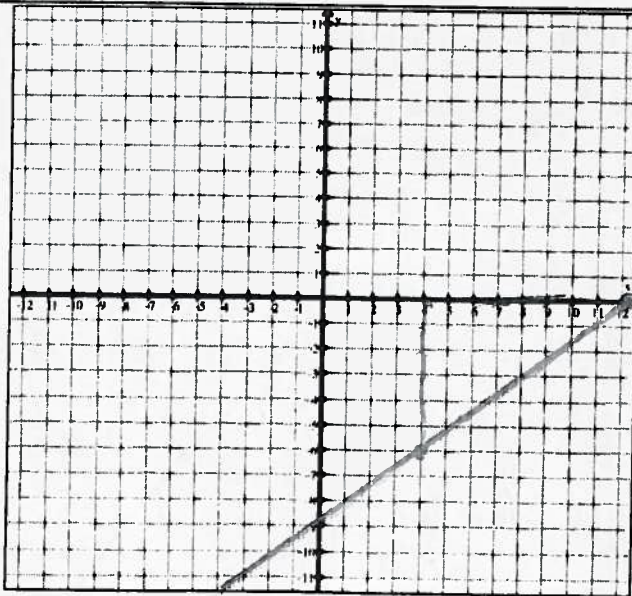$$10 = 6 + b$$
$$4 = b$$

y-intercept = 4

Equation: $y = 3x + 4$



$(x_1, y_1)$   $(x_2, y_2)$

**4. A (4, -6 ) B (12, 0)**

$$Slope = \frac{Rise}{Run} = \frac{y_2-y_1}{x_2-x_1} = \frac{0-(-6)}{12-4} = \frac{6}{8} = \frac{3}{4}$$

$$= \frac{6}{8}$$

$$y = \frac{3}{4}x + b$$
$$0 = \frac{3}{4}(12) + b$$
$$0 = 9 + b$$
$$-9 = b$$

y-intercept = -9

Equation: $y = \frac{6}{8}x - 9$

$$y = \frac{3}{4}x - 9$$