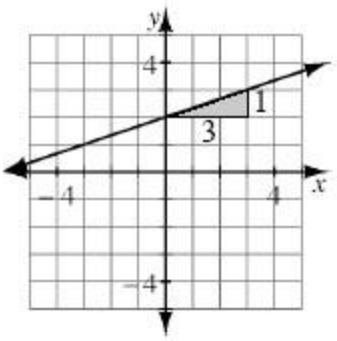
METHODS AND MEANINGS

MATH NOTES



Writing the Equation of a Line from a Graph

One of the ways to write the equation of a line directly from a graph is to find the slope of the line (m) and the y-intercept (b). These values can then be substituted into the general slope-intercept form of a line: $y = mx + b$.

For example, the slope of the line at right is $m = \frac{1}{3}$, while the y-intercept is (0, 2). By substituting $m = \frac{1}{3}$ and $b = 2$ into $y = mx + b$, the equation of the line is:

$$y = mx + b \rightarrow y = \tfrac{1}{3}x + 2$$

slope y-intercept

2-59. Consider the following tile pattern.

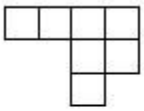


Figure 2

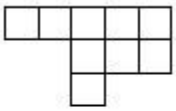


Figure 3

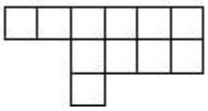


Figure 4

a. Create an Input/Output table for the tile pattern.

b. Write the equation for the tile pattern.

2-50. Solve each of the following equations.

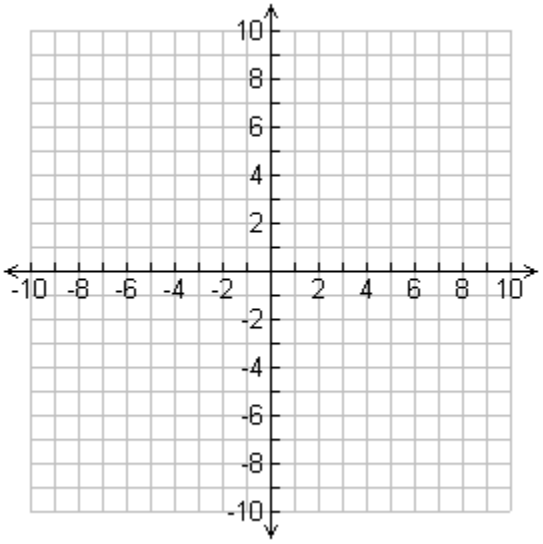
a. $1.5w + 3 = 3 + 2w$

b. $6x - 21 = 5x + 17 + x$

2-64. Graph each of the following equations on the same set of axes.

a. $y = 3x + 5$

b. $y = -2x + 10$



2-65. Review what you know about graphs by answering the following questions.

a. Find the equation of the line graphed at right.

b. What are its x- and y-intercepts?