Reteaching 6-2

Slope-Intercept Form

**OBJECTIVE:** Using the slope and y-intercept to draw graphs and write equations

**MATERIALS:** Graph paper, counters, ten index cards

Write these numbers on the index cards, one number to a card: 1, -1, 2, -2, \( \frac{1}{2} \), \(-\frac{1}{2} \), 3, -3, \( \frac{1}{3} \), -\( \frac{1}{3} \). These numbers represent different slopes.

- Draw a coordinate plane on the graph paper.
- Put a counter at any integer on the y-axis. Choose one of the index cards.

- Use the y-intercept shown by the counter and the slope shown on the card to write the equation of a line.
- Draw the graph of that line.

**Example**

Place the counter at -4. Choose the index card with the number 2.

\[ y = mx + b \]

Write the slope-intercept form of the equation of a straight line. The counter shows that \( b = -4 \). The first card gives a slope of 2, so \( m = 2 \).

\[ y = 2x + (-4) \]

Substitute the values shown by the counter and the card.

\[ y = 2x - 4 \]

Write the equation of the line in simplified form.

[Diagram of a graph with coordinates and a line]

Slope = \( \frac{\text{vertical change}}{\text{horizontal change}} \), so rewrite 2 as \( \frac{2}{1} \). Starting at the counter, move 2 units up and 1 unit to the right and place a second counter. Draw a straight line joining the two points for the graph of \( y = 2x - 4 \).

**Exercises**

Place the counter. Then choose an index card.

1. Write the equation of the line.
2. Draw the graph.

Write an equation for each line.

3. [Diagram of a graph with three points]
4. [Diagram of a graph with two points]
5. [Diagram of a graph with three points]