

**Parents as Partners***For use with Chapter 2*

**Chapter Overview** One way you can help your student succeed in Chapter 2 is by discussing the lesson goals in the chart below. When a lesson is completed, ask your student the following questions. “What were the goals of the lesson? What new words and formulas did you learn? How can you apply the ideas of the lesson to your life?”

Lesson Title	Lesson Goals	Key Applications
<b>2.1: Represent Relations and Functions</b>	Represent relations and graph linear functions.	<ul style="list-style-type: none"> <li>• Basketball</li> <li>• Diving</li> <li>• Mountain Climbing</li> </ul>
<b>2.2: Find Slope and Rate of Change</b>	Find slopes of lines and rates of change.	<ul style="list-style-type: none"> <li>• Forestry</li> <li>• Escalators</li> <li>• Road Grade</li> </ul>
<b>2.3: Graph Equations of Lines</b>	Graph linear equations in slope-intercept form or standard form.	<ul style="list-style-type: none"> <li>• Biology</li> <li>• Phone Cards</li> <li>• Volunteering</li> </ul>
<b>2.4: Write Equations of Lines</b>	Write linear equations.	<ul style="list-style-type: none"> <li>• Sports</li> <li>• Online Music</li> <li>• Car Expenses</li> </ul>
<b>2.5: Model Direct Variation</b>	Write and graph direct variation equations.	<ul style="list-style-type: none"> <li>• Meteorology</li> <li>• Sharks</li> <li>• Internet Downloads</li> </ul>
<b>2.6: Draw Scatter Plots and Best-Fitting Lines</b>	Fit lines to data in scatter plots.	<ul style="list-style-type: none"> <li>• Telephones</li> <li>• Population</li> <li>• Physical Science</li> </ul>
<b>2.7: Use Absolute Value Functions and Transformations</b>	Graph and write absolute value functions.	<ul style="list-style-type: none"> <li>• Holograms</li> <li>• Sales</li> <li>• Engineering</li> </ul>
<b>2.8: Graph Linear Inequalities in Two Variables</b>	Graph linear inequalities in two variables.	<ul style="list-style-type: none"> <li>• Movie Recording</li> <li>• Restaurant Management</li> <li>• Crafts</li> </ul>

**Big Ideas for Chapter 2**

In Chapter 2, you will apply the big ideas listed in the Chapter Opener (see page 71) and reviewed in the Chapter Summary (see page 140).

1. Representing relations and functions
2. Graphing linear equations and inequalities in two variables
3. Writing linear equations and inequalities in two variables

**Key Ideas** Your student can demonstrate understanding of key concepts by working through the following exercises with you.

Lesson	Exercise
2.1	The area $A$ of a circle with radius $r$ is given by the function $A(r) = \pi r^2$ . Find $A(7.2)$ . Explain what $A(7.2)$ represents.
2.2	The track of a roller coaster rises 27 feet over the horizontal distance of 45 feet. What is the slope of the track?
2.3	Find the $x$ - and $y$ -intercepts of the graph of $6x - 4y = -10$ . Describe what the $x$ -intercept of a line represents.
2.4	Write an equation in standard form of the line that passes through $(4, 1)$ and is perpendicular to the line $y = -2x + 1$ . Use integer values of $A$ , $B$ , and $C$ .
2.5	The variables $x$ and $y$ vary directly. Write an equation that relates $x$ and $y$ if $x = 5$ and $y = -4$ . Give the constant of variation. Then find $x$ when $y = 2$ .
2.6	A set of data has a correlation coefficient of $r = 0.97$ . Describe the scatter plot of the data.
2.7	Without graphing, describe the difference between the graphs of $y =  x $ and $y = -2 x  + 3$ .
2.8	Tell whether $(2.5, 3)$ and $(3, 1.4)$ are solutions of $-2x + y \leq -3$ .

### Home Involvement Activity

**Directions** Select a stock from a newspaper and record the price per share every day for two weeks. Draw a scatter plot of the data pairs (day, price per share). Describe whether the data points show a positive correlation, a negative correlation, or approximately no correlation.

**2.1:** about 163;  $A(7.2)$  represents the area of the circle with radius 7.2. **2.2:**  $\frac{5}{3}$   
**2.3:**  $x$ -intercept:  $-\frac{5}{2}$ ;  $y$ -intercept:  $\frac{7}{5}$ ; The  $x$ -intercept of a line is the point where the line intersects the  $x$ -axis. **2.4:**  $x - 2y = 2$  **2.5:**  $y = -\frac{5}{4}x; -\frac{5}{4}$  **2.6:** The scatter plot shows a strong positive correlation. Because  $r$  is near 1, the points lie close to a line with a positive slope. **2.7:** The graph of  $y = -2|x| + 3$  is the graph of  $y = |x|$  vertically stretched, reflected in the  $x$ -axis, and then translated 3 units up. **2.8:** not a solution; solution

### Answers