

# Parent Guide for Student Success

For use with Chapter 3: Solving Linear Equations

**Chapter Overview** One way that you can help your student succeed in Chapter 3 is by discussing the lesson goals in the chart below. When a lesson is completed, ask your student to interpret the lesson goals for you and to explain how the mathematics of the lesson relates to one of the key applications listed in the chart.

<i>Lesson Title</i>	<i>Lesson Goals</i>	<i>Key Applications</i>
<b>3.1: Solving Equations Using Addition and Subtraction</b>	Solve linear equations using addition and subtraction. Use linear equations to solve real-life problems.	<ul style="list-style-type: none"> <li>• Temperature Changes</li> <li>• Computer Time</li> <li>• City Parks</li> </ul>
<b>3.2: Solving Equations Using Multiplication and Division</b>	Solve linear equations using multiplication and division. Use multiplication and division equations to solve real-life and geometric problems.	<ul style="list-style-type: none"> <li>• Restoring Movies</li> <li>• Thunderstorms</li> <li>• Bald Eagles</li> </ul>
<b>3.3: Solving Multi-Step Equations</b>	Use two or more transformations to solve an equation. Use multi-step equations to solve real-life problems.	<ul style="list-style-type: none"> <li>• Medical Rescue</li> <li>• Firefighting</li> <li>• Height of a Fountain</li> </ul>
<b>3.4: Solving Equations with Variables on Both Sides</b>	Collect variables on one side of an equation. Use equations to solve real-life problems.	<ul style="list-style-type: none"> <li>• Membership Fees</li> <li>• Rock Climbing</li> <li>• Tall Buildings</li> </ul>
<b>3.5: Linear Equations and Problem Solving</b>	Draw a diagram to help you understand real-life problems. Use tables and graphs to check your answers.	<ul style="list-style-type: none"> <li>• Yearbook Design</li> <li>• Gazelles and Cheetahs</li> <li>• Package Size</li> </ul>
<b>3.6: Solving Decimal Equations</b>	Find exact and approximate solutions of equations that contain decimals. Solve real-life problems that use decimals.	<ul style="list-style-type: none"> <li>• Retail Purchases</li> <li>• Cocoa Consumption</li> <li>• Bridge Expansion</li> </ul>
<b>3.7: Formulas and Functions</b>	Solve a formula or literal equation for one of its variables. Rewrite an equation in function form.	<ul style="list-style-type: none"> <li>• Mars Pathfinder</li> <li>• Scuba Diving</li> <li>• Tree Measure</li> </ul>
<b>3.8: Rates, Ratios, and Percents</b>	Use rates, ratios, and percents to model and solve real-life problems.	<ul style="list-style-type: none"> <li>• Exchange Rates</li> <li>• Glass Recycling</li> <li>• Outdoor Recreation</li> </ul>

## Test-Taking Strategy

Always **check your solution** against the original problem. When possible **use a different method** to check so you don't repeat an error. Ask your student why going back to the original problem is especially important in Lesson 3.5. Have your student show you an example from the chapter of how to check using different steps than those used to solve the problem.

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

Lesson	Exercise
3.1	Write and solve an equation to answer the question. On a shopping trip, Clara and Sean Robinson's mother spent the same amount of money as Clara and Sean combined. If Clara spent \$37 and their mother spent \$64, how much did Sean spend?
3.2	Write and solve an equation to answer the question. One fifth of the students attending Ayla Middle School play sports. If 136 students play sports, how many students attend the school?
3.3	Solve the equation. $25 = 3(5x - 1) - x$
3.4	Solve the equation if possible. $\frac{2}{3}(12 - 9y) = 2(7 - 4y)$
3.5	Write and solve an equation to answer the question. Steven Spitz can buy either a CD player for \$189 and CDs for \$9.75 each or a cassette player for \$216 and cassettes for \$5.25 each. For what number of CDs or cassettes do the two options cost the same if Steven wants to buy the same number of CDs or cassettes?
3.6	Solve the equation. Round the result to the nearest hundredth. $14.8 + 3.94x = 2.47x - 12.8$
3.7	Rewrite the equation so $x$ is a function of $y$ . Then use the result to find $x$ when $y = -3$ . $7y - 3(x + 4) = 18$
3.8	The speed limit on the interstate expressway in many states is 65 miles per hour. How many kilometers per hour is that? (1 mi = 1.609 km)

**Home Involvement Activity**

**Directions:** Find the cost for two long distance phone services, including any monthly fees and the charge per minute for calls within the U.S. Let  $x$  be the number of minutes of long distance service used in a month. Write an equation and solve it, if possible, to find for how many minutes the two services cost the same. Which service is cheaper if you call fewer than this number of minutes? Which service is cheaper for your family?

Answers

3.1:  $x + 37 = 64 + 5.25x$ ; 3.2:  $\frac{2}{3}(12 - 9y) = 2(7 - 4y)$ ; 3.3: 2; 3.4: 3; 3.5: 189 + 9.75x = 216 + 5.25x; 3.6:  $x = -18.78$ ; 3.7:  $x = \frac{7}{7}$ ; 3.8: about 104.6 km/hr