
UNIT 2 • REASONING WITH LINEAR EQUATIONS AND INEQUALITIES

Lesson 1: Creating Linear Equations and Inequalities in One Variable

Instruction

Guided Practice 2.1.1

Example 1

James earns \$15 per hour as a teller at a bank. In one week he pays 17% of his earnings in state and federal taxes. His take-home pay for the week is \$460.65. How many hours did James work?

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Example 2

Brianna has saved \$600 to buy a new TV. If the TV she wants costs \$1,800 and she saves \$20 a week, how many years will it take her to buy the TV?

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Example 3

Suppose two brothers who live 55 miles apart decide to have lunch together. To prevent either brother from driving the entire distance, they agree to leave their homes at the same time, drive toward each other, and meet somewhere along the route. The older brother drives cautiously at an average speed of 60 miles per hour. The younger brother drives faster, at an average speed of 70 mph, but still within the speed limit. How long will it take the brothers to meet each other?

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Example 4

Think about the following scenarios. In what units should they be reported? Explain the reasoning.

- The rate at which water fills up a swimming pool
- The cost of tiling a kitchen floor
- The average speed of a falling object
- The rate at which a snail travels across a sidewalk
- The rate at which a room is painted

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Exempl

Ernesto built a wooden car for a soap box derby. He is painting the top of the car blue and the sides black. He already has enough black paint, but needs to buy blue paint. He needs to know the approximate area of the top of the car to determine the size of the container of blue paint he should buy. He measured the length to be 9 feet $11\frac{1}{4}$ inches, and the width to be $\frac{1}{2}$ inch less than 3 feet. What is the surface area of the top of the car? What is the most accurate area measurement Ernesto can use to buy his paint?

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