PROBLEM SOLVING WORKSHOP
LESSON 2.5

Using ALTERNATIVE METHODS

Another Way to Solve Example 5, page 98

TEKS a.6

MULTIPLE REPRESENTATIONS In Example 5 on page 98, you saw how to solve a problem about exercising using a verbal model and an equation. You can also solve the problem by breaking it into parts.

PROBLEM

EXERCISING Your daily workout plan involves a total of 50 minutes of running and swimming. You burn 15 calories per minute when running and 9 calories per minute when swimming. Find the number of calories you burn if you run for 20 minutes.

METHOD

Breaking into Parts You can solve the problem by breaking it into parts.

STEP 1 **Find** the number of calories you burn when running.

$$\frac{15 \text{ calories}}{\text{per minute}} \cdot 20 \text{ minutes} = 300 \text{ calories}$$

Your running time is 20 minutes, so your swimming time is $50 - 20 = 30$ minutes.

STEP 2 **Find** the calories you burn when swimming.

$$\frac{9 \text{ calories}}{\text{per minute}} \cdot 30 \text{ minutes} = 270 \text{ calories}$$

STEP 3 **Add** the calories you burn when doing each activity. You burn a total of 570 calories.

$$300 \text{ calories} + 270 \text{ calories} = 570 \text{ calories}$$

PRACTICE

1. **VACATIONING** Your family is taking a vacation for 10 nights. You will spend some nights at a campground and the rest of the nights at a motel. A campground stay costs \$15 per night, and a motel stay costs \$60 per night. Find the total cost of lodging if you stay at a campground for 6 nights. Solve this problem using two different methods.

2. **WHAT IF?** In Exercise 1, suppose the vacation lasts 12 days. Find the total cost of lodging if you stay at the campground for 6 nights. Solve this problem using two different methods.

3. **FLORIST** During the summer, you work 35 hours per week at a florist shop. You get paid \$8 per hour for working at the register and \$9.50 per hour for making deliveries. Find the total amount you earn this week if you spend 5 hours making deliveries. Solve this problem using two different methods.

4. **ERROR ANALYSIS** *Describe* and correct the error in solving Exercise 3.

$$\$8 \text{ per hour} \cdot 5 \text{ hours} = \$40$$
$$\$9.50 \text{ per hour} \cdot 30 \text{ hours} = \$285$$
$$\$40 + \$285 = \$325$$