EXAMPLE 3 Solve a multi-step problem

RENTAL BUSINESS A business rents in-line skates and bicycles. During one day, the business has a total of 25 rentals and collects $450 for the rentals. Find the number of pairs of skates rented and the number of bicycles rented.

Solution

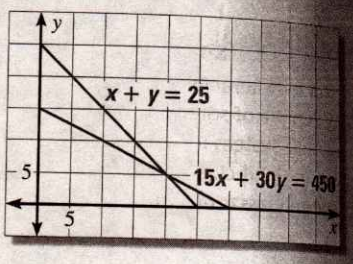
STEP 1 **Write** a linear system. Let x be the number of pairs of skates rented, and let y be the number of bicycles rented.

$x + y = 25$ **Equation for number of rentals**

$15x + 30y = 450$ **Equation for money collected from rentals**

STEP 2 **Graph** both equations.

STEP 3 **Estimate** the point of intersection. The two lines appear to intersect at (20, 5).



STEP 4 **Check** whether (20, 5) is a solution.

$x + y = 25$	$15x + 30y = 450$
$20 + 5 \stackrel{?}{=} 25$	$15(20) + 30(5) \stackrel{?}{=} 450$
$25 = 25$ ✓	$450 = 450$ ✓

▶ The business rented 20 pairs of skates and 5 bicycles.

✓ GUIDED PRACTICE for Example 3

4. **WHAT IF?** In Example 3, suppose the business has a total of 20 rentals and collects $420. Find the number of bicycles rented.

7.1 EXERCISES

HOMEWORK KEY

◆ = **MULTIPLE CHOICE PRACTICE** Exs. 6, 7, 34, and 40–42

○ = **HINTS AND HOMEWORK HELP** for Exs. 9, 15, and 35 at classzone.com

SKILLS • PROBLEM SOLVING • REASONING

1. **VOCABULARY** Copy and complete: A(n) ? of a system of linear equations in two variables is an ordered pair that satisfies each equation in the system.

2. **WRITING** *Explain* how to use the graph-and-check method to solve a linear system of two equations in two variables.

CHECKING SOLUTIONS **Tell whether the ordered pair is a solution of the linear system.**

3. $(-3, 1)$;
$x + y = -2$
$x + 5y = 2$

4. $(5, 2)$;
$2x - 3y = 4$
$2x + 8y = 11$

5. $(-2, 1)$;
$6x + 5y = -7$
$x - 2y = 0$