EXAMPLE 6 Analyze a conditional statement

Identify the hypothesis and the conclusion of the statement "If a number is a rational number, then the number is an integer." Tell whether the statement is *true* or *false*. If it is false, give a counterexample.

Solution

Hypothesis: a number is a rational number

Conclusion: the number is an integer

The statement is false. The number 0.5 is a counterexample, because 0.5 is a rational number but not an integer.

✓ GUIDED PRACTICE for Examples 4, 5, and 6

For the given value of a, find $-a$ and $|a|$.

8. $a = 5.3$ **9.** $a = -7$ **10.** $a = -\frac{4}{9}$

Identify the hypothesis and the conclusion of the statement. Tell whether the statement is *true* or *false*. If it is false, give a counterexample.

11. If a number is a rational number, then the number is positive.

12. If the absolute value of a number is positive, then the number is positive.

2.1 EXERCISES

HOMEWORK KEY

○ = **WORKED-OUT SOLUTIONS** on p. WS1 for Exs. 7, 29, and 57

= **TAKS PRACTICE AND REASONING** Exs. 39, 50, 56, 59, 61, and 62

SKILL PRACTICE

1. VOCABULARY Copy and complete: A number is a(n) ? if it can be written in the form $\frac{a}{b}$ where a and b are integers and $b \neq 0$.

2. VOCABULARY What is the opposite of -2?

3. WRITING *Describe* the difference between whole numbers and positive integers.

4. WRITING For a negative number x, is the absolute value of x a *positive number* or a *negative number*? *Explain*.

EXAMPLE 1 on p. 64 for Exs. 5–13

GRAPHING AND COMPARING INTEGERS **Graph the numbers on a number line. Then tell which number is greater.**

5. 0 and 7 **6.** 0 and -4 **7.** -5 and -6

8. -2 and -3 **9.** 5 and -2 **10.** -12 and 8

11. -1 and -5 **12.** 3 and -13 **13.** -20 and -2