## Key Concept — Biconditional Statements

take note

A biconditional combines $p \to q$ and $q \to p$ as $p \leftrightarrow q$.

| Example | Symbols | How to Read It |
|---|---|---|
| A point is a midpoint if and only if it divides a segment into two congruent segments. | $p \leftrightarrow q$ | "$p$ if and only if $q$" |

You can write a biconditional as two conditionals that are converses.

## Problem 2 — Identifying the Conditionals in a Biconditional

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*only if.*

**What are the two conditional statements that form this biconditional?**
**A ray is an angle bisector if and only if it divides an angle into two congruent angles.**

Let $p$ and $q$ represent the following:

$p$: A ray is an angle bisector.

$q$: A ray divides an angle into two congruent angles.

$p \to q$: If a ray is an angle bisector, then it divides an angle into two congruent angles.

$q \to p$: If a ray divides an angle into two congruent angles, then it is an angle bisector.

**Got It?** **2.** What are the two conditionals that form this biconditional?
Two numbers are reciprocals if and only if their product is 1.

As you learned in Lesson 1-2, undefined terms such as *point, line,* and *plane* are the building blocks of geometry. You understand the meanings of these terms intuitively. Then you use them to define other terms such as *segment.*

A good definition is a statement that can help you identify or classify an object. A good definition has several important components.

- ✔ A good definition uses clearly understood terms. These terms should be commonly understood or already defined.
- ✔ A good definition is precise. Good definitions avoid words such as *large, sort of,* and *almost.*
- ✔ A good definition is reversible. That means you can write a good definition as a true biconditional.