

take note

Key Concept Biconditional Statements

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

Example

A point is a midpoint if and only if it divides a segment into two congruent segments.

Symbols

$p \leftrightarrow q$

How to Read It

" 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

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.

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

$q \rightarrow p$: 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.