

**Sections 1.5** The Conditional and Biconditional Connectives

For statements  $P$  and  $Q$ , the conditional sentence  $P \rightarrow Q$  is the statement “If  $P$ , then  $Q$ .” Statement  $P$  is called the antecedent and  $Q$  is the consequent.

Let  $P$  and  $Q$  be propositions.

The converse of  $P \rightarrow Q$  is  $Q \rightarrow P$ .

The contrapositive of  $P \rightarrow Q$  is  $\sim Q \rightarrow \sim P$ .

For statements  $P$  and  $Q$ , the biconditional sentence  $P \leftrightarrow Q$  is the statement “ $P$  if and only if  $Q$ .”