

Using a Venn diagram to illustrate a conditional statement can also help you determine whether an argument leads to a valid conclusion.

Suppose this conditional is true:

All runners are athletes.

(If a person is a runner, then that person is an athlete.)

What can you conclude from each additional statement?

1. Leroy is a runner.
2. Lucia is not an athlete.
3. Linda is an athlete.
4. Larry is not a runner.

The conditional is paired with the four different statements as shown below.



1. *Given:* If p , then q ;

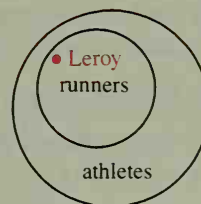
p

Conclusion: q

All runners are athletes.

Leroy is a runner.

Leroy is an athlete.



2. *Given:* If p , then q ;

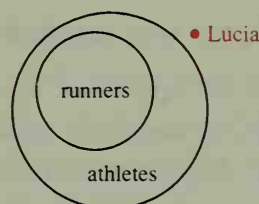
not q

Conclusion: not p

All runners are athletes.

Lucia is not an athlete.

Lucia is not a runner.



3. *Given:* If p , then q ;

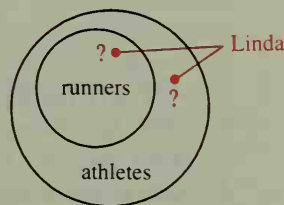
q

No conclusion follows.

All runners are athletes.

Linda is an athlete.

Linda might be a runner or she might not be.



4. *Given:* If p , then q ;

not p

No conclusion follows.

All runners are athletes.

Larry is not a runner.

Larry might be an athlete or he might not be.

