Def. Conditional Statement

A statement that is in the IF-THEN form.

A conditional is represented by the following words:

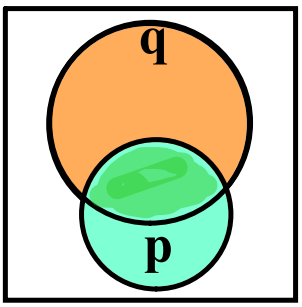
If p then q

A conditional is represented by the following symbols:

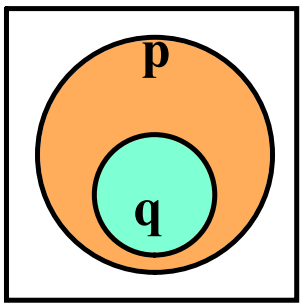
$$p \rightarrow q$$

Which of the following models represents: If p then q?

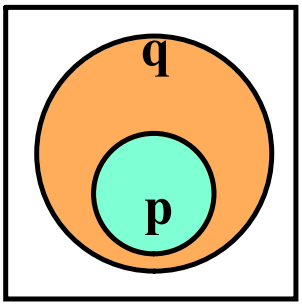
a)



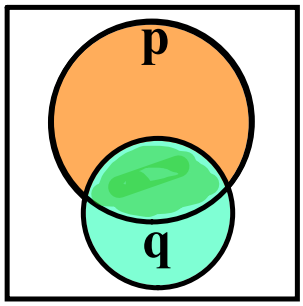
b)



c)



d)



2 parts of a conditional (IF-THEN) statement

The IF part is called the HYPOTHESIS

The THEN part is called the CONCLUSION

Def. Negation

A statement that has the opposite TRUTH-VALUE of a given statement.

To form the negation of a statement, you simply ADD or REMOVE the word NOT.

The symbol for NOT is ~

3 other conditionals formed form a given conditional

If p then q $\Rightarrow$ given

If q then p $\Rightarrow$ converse

If ~p then ~q $\Rightarrow$ inverse

If ~q then ~p $\Rightarrow$ contrapositive

Logically Equivalent

A CONDITIONAL and its CONTRAPOSITIVE ALWAYS have the same truth-value

The INVERSE and CONVERSE of a conditional ALWAYS have the same truth-value