

## Topic 4-2: Conditional Statements

A **conditional statement** is a statement that can be written in the form "if ***p***, then ***q***." It can also be written as, "***p***  $\rightarrow$  ***q***".

The **hypothesis** is the ***p*** part of the conditional following the word "if".

The **conclusion** is the ***q*** part of the conditional following the word "then".

**IDENTIFY** the hypothesis and conclusion by underlining the hypothesis **once** and the conclusion **twice**.

A) *If today is Thanksgiving, then today is Thursday.*

B) *A number is a rational number if it is an integer.*

**REWRITE** the statements below as conditional statements **and** underline the hypothesis once and the conclusion twice.

A) *A car with poor brakes is a menace on the highway.*

B) *Mr. Hancock gives his students homework on days that end in 'y'.*

	<b>Symbolic logic</b>	<b>Statement</b>	<b>T/F</b>	<b>Counterexample (If False)</b>
Conditional		If an angle has a measure of $120^\circ$ , then it is an obtuse angle.		
Converse				
Inverse				
Contrapositive				

**What relationship do you notice between the Conditional and Contrapositive? How about the Converse and Inverse?**

**Work With a Partner to Practice**

	<b>Statement</b>	<b>T/F</b>	<b>Counterexample</b> (Give one example that disproves only the FALSE statements)
Conditional	If you play football then you are an athlete.		
Converse			
Inverse			
Contrapositive			

	<b>Statement</b>	<b>T/F</b>	<b>Counterexample</b> (Give one example that disproves only the FALSE statements)
Conditional	<i>If school is in session, then it is a weekday.</i>		
Converse			
Inverse			
Contrapositive			

Be prepared to share your answers with the class – especially counterexamples!