

## Conditionals (If - Then Statements)

Conditional - A statement of the form "If...then...".

If an angle measures  $90^\circ$  then it is a right angle.

$$p \rightarrow q$$

Conditional:	$p \rightarrow q$	If an angle measures $90^\circ$ then it is a right angle.
Converse:	$q \rightarrow p$	If an angle is a right angle then it measures $90^\circ$ .
Inverse:	$\sim p \rightarrow \sim q$	If an angle does not measure $90^\circ$ then it is not a right angle.
Contrapositive:	$\sim q \rightarrow \sim p$	If an angle is not a right angle then it does not measure $90^\circ$ .

Logically Equivalent - Two statements that have the same truth value.

The conditional statement is logically equivalent to its contrapositive.

The converse and inverse statements are logically equivalent.

Directions: Identify the hypothesis and the conclusion of each conditional statement.

1. If three points are collinear then they lie on the same line.

2. All squares are quadrilaterals.

3. Vertical angles are congruent.

4. The intersection of two planes is a line.

Directions: Write the converse, inverse and contrapositive of each statement. Determine if the converse, inverse and contrapositive are true or false.

5. Vertical Angles are congruent.