

9/23/19 - Warm Up Problem

Rewrite each statement so that it begins with the word "If" and contains the word "then."

if Students ^{use} taking Geometry ^{How they} are high school students.

if People ~~who~~ like Star Wars ^{How they} are cool.

Friday's Assignment

Inductive Reasoning: reasoning based on patterns - using several specific examples to make a plausible prediction

Conjecture: an unproven statement based on observations
- prove a conjecture is false by finding a counterexample

Sections 2.2-2.3 - Conditional and Biconditional Statements

goals: recognize and write conditional statements
write converses and biconditionals

If you are not completely satisfied, then your money will be refunded.

If you buy one pair of shoes, then you get another pair at 50% off.

Conditional Statement:
a statement written in if-then form

Parts of a Conditional Statement

- every conditional statement has 2 parts

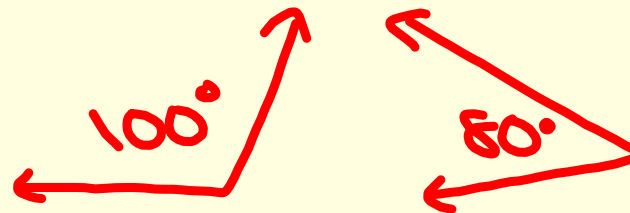
Hypothesis: the phrase following the word **if**

Conclusion: the phrase following the word **then**

example:

If **two angles are supplementary**, then **they form a linear pair**.

Counterexample: an example that proves a statement is false



The Converse of a Conditional Statement

If an angle has a measure of 90 degrees, then it is a right angle.
If it is a right angle, then an angle has a measure of 90 degrees.

Converse: the statement formed by exchanging the hypothesis and conclusion of a conditional statement

If a polygon has five sides, then it is a pentagon.

If it is a pentagon, then a polygon has 5 sides.

If two angles are vertical angles, then they are congruent.

If they are congruent, then 2 angles are vertical angles.



Answer these questions in your notes.

EXAMPLE:

If an angle measures 80 degrees, then it is acute.

a) Is the statement true? If not, find a counterexample.

Yes

b) Write the converse of the statement.

If it is acute, then an angle measures 80 degrees.

c) Is the converse true? If not, find a counterexample.

It is not true. A 50 degree angle is also acute.

Biconditional Statements

Biconditional: a statement that is true no matter what order it is written in

- the hypothesis and conclusion are joined together with the words "if and only if"

~~Conditional:~~

If two angles add to 180 degrees, then they are supplementary.

~~Converse:~~

If they are supplementary, then two angles add to 180 degrees.

Biconditional:

Two angles add to 180 degrees if and only if they are supplementary.

↘ iff

In your notes...

Write the converse of the statement below. If it is true, write a biconditional statement.

Conditional:

If two angles have the same measure, then the angles are congruent.

Converse:

If two angles are congruent, then they have the same measure.

Biconditional:

Two angles are congruent if and only if they have the same measure.

Could we write these statements as biconditionals? What would the biconditional be?

If two angles are a linear pair, then they are supplementary.

If they are supplementary, then two angles are linear pair



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

If they lie on the same line, then 3 points are collinear.

Three points are collinear iff they lie on the same line.

Assignment:

Math XL

Concept 5 part 2

mathxforschool.com

Attachments

ingres.webloc