

M-G Geometry Week 6 10/17

Conditional Statements "If... then"

If ^{hypothesis} you call your mom "chunky", then you will
die a painful death. ^{conclusion}

Good definition - must be true forwards and backwards.

Converse - switch the order of the hypothesis and conclusion.

If you died a painful death, then you called your mom "chunky". False

Counterexample: Ben's weekend.

If ^{hypothesis} you watch a Marvel movie, then you should
stay for the end credits. ^{conclusion}

Converse:

If you stay for the end credits, then you watched a Marvel movie.

False

If you are in the presence of Nate, ^{hypothesis}

then you are in the presence of the
greatest man alive. ^{conclusion}

Converse: If you are in the presence of
the greatest man alive, then you are
in the presence of Nate.

(probably not true)

True!

Biconditional Statement → a good definition

^{no "If"} You are in the presence of the "greatest"
"man" "alive" if, and only if, you are in
the presence of Nate. ^{no "then"}

Identify hypothesis and conclusion.

Write converse.

If the converse is true, write the biconditional statement (if, and only if)

1.) If you are eating an orange, then you are eating something disgusting.

hypothesis
conclusion

Converse

If you are eating something disgusting, then you are eating an orange.

False

2.) If you are in Geometry class, then you are looking at Nate's hideous face.

hypothesis
conclusion

Converse: If you are looking at Nate's hideous face, then you are in Geometry class.

False

3.) If it is October 31st, then it is Halloween.

hypothesis
conclusion

Converse: If it is Halloween, then it is Oct 31st

Biconditional statement

It is Halloween if, and only if, it is Oct 31st.

1.) If $n = 8$, then $n^2 = 64$

Converse

If $n^2 = 64$, then $n = 8$ False

Counter example $n = -8$

2.) If you are in the capitol of NC, then you are in Raleigh.

Converse: If you are in Raleigh, then you are in the capitol of NC true

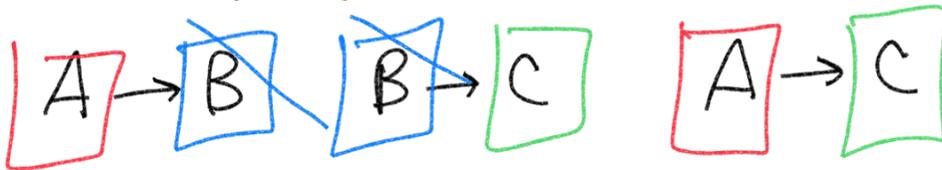
Biconditional Statement

You are in Raleigh if, and only if, you are in the capitol of NC

If you make fun of Nate, then he will be sad.

If Nate is sad, then he will eat eight dozen donuts.

Law of Syllogism (Transitive Property)



If you make fun of Nate, then he will eat eight dozen donuts.

If you eat ¹ shrimp, then you ² may eat the
"vein".

If you eat ² the "vein", then you ³ are eating poop.

Law of Syllogism 1 → 3

If you eat shrimp, then you are eating poop.

Law of Detachment

If you are a math teacher,

hypothesis

then you are a sad... sad... so sad
lonely person

conclusion

If you're given the hypothesis, then you can
return the conclusion

If you're given the conclusion, then you
cannot return the hypothesis.

Karianne is a math teacher.

She is a sad, lonely person.

Dalton is a sad, lonely person.

no conclusion

If you are a twinkie,
then Madelyn's mom loves you more
than her.

- Alex is a twinkie

Madelyn's mom loves Alex more
than Madelyn.

- Madelyn's mom loves Haley more
than Madelyn.

no conclusion