

Geometry B3
(Hypothesis)

(If then statement ≠ establishes)

Statement	If - then - form
• Babies are illogical	If a baby is a person then: people are illogical
No body is Despised who can handle an Alligator	If a person can handle an alligator Then: that person is not despised
if a straight angle is 180°	If the supplementary angles add to 180° then: the supplementary angles add to a straight angle
illogical people are despised	if a person is illogical then: they are despised.
Statement ...	If ... Then ...

Converse - formed by ^{etc} changing the conclusion and the hypothesis of a conditional statement.

Conditional:
(True) Adjacent angles have a common side.

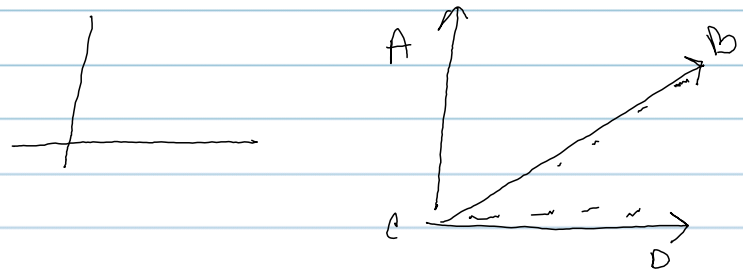
is the converse true or false?

(if-then) Conditional
reverse

~~If two angles are adjacent then they share a common side~~
~~If two angles share a common side they are adjacent.~~

~~both are true~~
true

false



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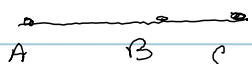
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Geometry B3 (con.)

Inductive Reasoning and Conjecturing

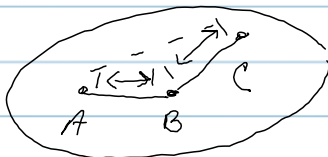
Conjecture - an educated guess

Counterexample - proves original conjecture is false.

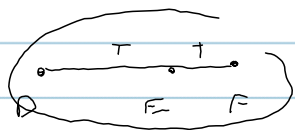


$$\overline{AB} \cong \overline{BC}$$

Then B is midpoint



Given: $\overline{D, E, F}$ are collinear (false conjecture)
 Conjecture: $DE + EF = DF$



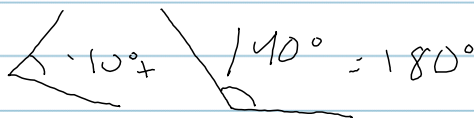
$$ED + DF = EF$$

because when the points are switched the statement is false.

✓ - for a counterexample is D is between E and F then it is false.

Given: $\angle A$ and $\angle B$ are supplementary $= 180^\circ$
 Conjecture: $\angle A$ and $\angle B$ are adjacent angles.

Adj 180°



(false statement)

because the statement does not say that they are sharing a vertex and side.