Geometry
Notes 2-1 Conditional Statements

Name_____
Date_____Period____

If - then ↑ hypothesis ↖ conclusion Conditional Statement	You have heard if-then statements such as: If you are not completely satisfied with the product, then return it for a full refund. Another name for an If-then statement.
If hypothesis then conclusion	Every conditional has two parts. The part following the "if" is the hypothesis and the part following the "then" is the conclusion.

Identifying the hypothesis and the conclusion:

If two lines intersect to form right angles then they are perpendicular

Hypothesis (single underline)

Conclusion (double underline)

If $x-38=3$ then $x=41$.

Writing a Conditional:

a. A rectangles has four right angles

If a figure is a rectangle then it has four right angles

b. A tiger is an animal

If something is a tiger then it is an animal.

Truth Value	A conditional can have a truth value of true or false.
True	To show that a conditional is true, show that every time the hypothesis is true, the conclusion is also true.
False	To show that a conditional is false, you need to find only *one counterexample* for which the hypothesis is true and the conclusion is false.

Show that this conditional is false by finding a counterexample:

If it is February, then there are only 28 days in the month.

To show that this conditional is false, you need to find one counterexample that shows the hypothesis true and the conclusion false.

Counterexample: February 2008, because it was a leap year and February had 29 days.

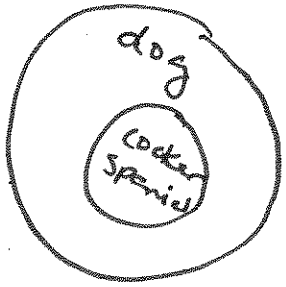
Using Venn Diagrams:

Draw a Venn diagram to illustrate this conditional:

If you live in Chicago, then you live in Illinois.

Draw a Venn Diagram to Illustrate this conditional:

If something is a cocker spaniel, then it is a dog.



The Converse	The converse of a conditional switches the hypothesis and the conclusion.

Writing the Converse of a Conditional:

Conditional:

If two lines intersect to form right angles **then** they are perpendicular

Converse:

If two lines are perpendicular **then** they intersect to form right angles.

Write the converse of the following conditional:

If two lines are not parallel and do not intersect, **then** they are skew.