**If- Then Statement**

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| **If it is red, then it is an apple.**  The “if” part of the statement is called the HYPOTHESIS.  The “then” part of the statement is called the CONCLUSION. |

In the statements below underline the hypothesis once and the conclusion twice or highlight each in a different color.

1.) If a figure has four sides, then it is a rectangle.

2.) If a quadrilateral is a square, then it is a rectangle.

3.) If , Then M is the midpoint of

4.) If it is yellow, then it is a sunflower.

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| To show that a statement is false, you just need one **counterexample**. A counter example makes the hypothesis true, but the conclusion false.  In the example above, you would need to find something that is red (hypothesis true), but is NOT and apple (conclusion false)  A counter example would be a fire truck. So the statement is not true. If you cannot think of a counter example, there is a good chance that the statement is true (You cannot be sure unless you do a proof, which we will do later in this course). |

Now go back to the problems above. If you can find a counterexample, describe or draw it and write FALSE next to the statement. Otherwise write TRUE next to the statement.

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| The **converse** of a statement is when you reverse the hypothesis and the conclusion to make a new if-then statement.  The converse of the statement at the top of this sheet would be **If it is an apple, Then it is red.**  *Is this true? or is there a counterexample?* |

Write the converse of each of the four statements and see if you can find a counterexample for each of these new statements.

When you’ve completed this worksheet upload it to moodle.