Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Date:\_\_\_\_\_\_\_

Logic and Proofs – Unit 4

Conditional Statements – Day 1

Conditional Statement:

Short hand for an if-then statement



**Example 1.** **Identify the hypothesis and conclusion of the following statement.**

**A.** **If a polygon has 6 sides, then it is a hexagon.**

**B. Tamika will advance to the next level of play if she completes the maze in her computer game.**

**Example 2. Identify the hypothesis and conclusion of the following statement. Then write the statement in the if-then form**

**A. A mammal is a warm-blooded animal.**

**B. A five-sided polygon is a pentagon.**

**Truth Values**

The hypothesis and conclusion of a conditional statement can have a truth value of true or false, as can the conditional statement itself. Consider the following example.

*If Tom finishes his homework, then he will clean his room.*



**Example 3. Determine the truth value of the conditional statement. If *false*, give a counterexample.**

**A. If you divide an integer by another integer, the result is also an integer.**

**B. If last month was February, then this month is March.**

**C. When a rectangle has five sides, it is a parallelogram.**



**Example 4. Write the converse, inverse and contrapositive of the following.**

***Two angles that have the same measurement are congruent.***

**CONVERSE:

INVERSE:

CONTRAPOSITIVE:**