Name: _____ Date: _____ Period: _____

Geometry – Chapter 2 Review (2-1 through 2-4)

Part #1: Complete each blank statement below.

Conditional: If a polygon has 4 sides, then it is a quadrilateral.

Converse: _____

Inverse: _____

Contrapositive: _____

Part #2: Write a counter example for each statement below.

a) If $x^2 = 25$, then $x = 5$.

a) _____

b) If the area of a rectangle is 50 cm^2, then the length is 2cm and the width is 25cm.

b) _____

c) If an angle is acute, then it measures 45 degrees.

c) _____

Part #3 – Complete the next 3 terms in each pattern below:

a) 1, -2, 4, -8, 16, _____, _____, _____

b) 1,1,2,3,5,8,13,21, _____, _____, _____

c) 1, 2, 4, 7, 11, 16, 22, _____, _____, _____

Part #4 – Identify the hypothesis and conclusion of the following statement:
"If two angles are supplementary angles, then the sum of their measures is 180 degrees."

Hypothesis: _____

Conclusion: _____

Part #5 – Using deductive reasoning

a) Determine if the following conjecture is valid by the Law of Detachment.

<u>Given:</u> If Ron finishes washing dishes, he can go to the batting cage. Ron finishes washing dishes.

<u>Conjecture:</u> Ron goes to the batting cage.

Valid or Invalid: _____

b) Determine if the following conjecture is valid by the Law of Syllogism.
Given: If two angles lie in the same plane and have a common vertex and a common side, but no common interior points, then they are adjacent angles. If two adjacent angles are a linear pair, then their noncommon sides are opposite rays.
Conjecture: If two angles lie in the same plane and have a common vertex and a common side and no common interior points, then their noncommon sides are opposite rays.

Valid or Invalid: _____

Part #6 – Biconditional Statements
a) For the conditional, "If a point divides a segment into two congruent segments, then the point is the midpoint of the segment," write the converse and biconditional statements.

Converse: _____

_____

Biconditional: _____

_____

b) Determine if the biconditional, "A number is divisible by 6 if and only if it is divisible by 3" is true. If false, give a counterexample.

_____

Part #7 – Fill-in each blank with the correct term.

a) _____ _____ is the process of reasoning that a rule or statement is true because specific cases are true.

b) _____ _____ is the process of using logic to draw conclusions from given facts, definitions, and properties.

c) A statement you believe to be true based on inductive reasoning is called a _____

d) A _____ is a statement that describes a mathematical object and can be written as a true biconditional.

e) A _____ is defined as a closed plane figure formed by three or more line segments.