Name: _____

Inverse, Converse, and Contra Positives

1) Write the converse, inverse, and contra positive of the conditional statement. Determine whether each statement is true or false. If a statement is false, find a counterexample.

   If 89 is divisible by 2, then 89 is an even number.

2) In the spaces provided below, write the converse, the inverse, and the contra positive of the statement "If I study hard, then I will pass."

   Converse:_____

   Inverse:_____

   Contra positive:_____

3) Write a statement that is logically equivalent to the statement "If two sides of a triangle are congruent, the angles opposite those sides are congruent." Identify the new statement as the converse, inverse, or contra positive of the original statement.

4) What is the converse of the statement "If $a^2 + b^2 = c^2$, then $\triangle ABC$ is a right triangle"?

5) Which statement is the inverse of "If the waves are small, I do not go surfing"?

   (1) If the waves are not small, I do not go surfing.

   (2) If I do not go surfing, the waves are small.

   (3) If I go surfing, the waves are not small.

   (4) If the waves are not small, I go surfing.