

# Math 2283 - Introduction to Logic

Quiz #4 - 2010.09.10

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

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1. Construct a truth table for the following statement:  $\sim (p \rightarrow q) \wedge \sim (q \rightarrow p)$

2. State the three conjugate sentences (label each one appropriately) to the following conditional statement:

If  $n$  is even, then  $n^2$  is even.

3. Note that all four conditional statements from problem 2 are true. Explain why this fact, along with the truth table from problem 1 prove that the negation of a conditional statement cannot, itself, be a conditional statement of the form  $a \rightarrow b$ .