Practice Test 2 for Math 1100

1) Determine if the following are statements:

a) Today it will rain.

b) I think today it will rain.

2) Rewrite the following compound statements using p, q, r, $\wedge, \vee, \sim,$ and $\rightarrow$ as needed. Be sure to declare what the letters p, q, and r represent:

a) He is from England and he does not watch soccer.

b) If she watches the movie or plays the tuba, then we can be best friends.

3) Let p = "That pigeon ordered a pizza" and q = "That pigeon speaks Greek". Translate the following into words:

a) $\sim p$

b) $p \rightarrow \sim q$

c) $p \wedge \sim q$

4) Let p and q be a true statements and let r be a false statement. Show the work to determine the truth value of the given compound statement:

a) $p \land \sim q$

b) $(p \lor q) \to \sim r$

5) Negate the following statements:

a) I'll be back.

b) It was the best of times and it was the worst of times.

c) If you build it, he will come.

d) Nobody puts Baby in a corner.

6) Write the truth table for the following:

a) $q \to \sim p$

b) $(p \lor q) \land \sim r$

7) For the statement "All cats eat lasagna", write it first as an if-then statement, then find the converse, inverse, and contrapositive:

      If-then:

      Converse:

      Inverse:

      Contrapositive:

8) Use an Euler diagram to determine whether the argument is valid or invalid:

a)   All cats like fish.
        Henry does not like fish.
        Henry is not a cat.

b)   All students who study get better grades.
        Rodger is a student.
        Rodger will get better grades.

9) Use a truth table to determine whether the argument is valid:

a)
$$p \rightarrow q$$
$$\underline{\sim q}$$
$$\sim p$$

b)
$$p \vee q$$
$$\underline{q}$$
$$p$$