CSCI 1900 - Homework 9-B

**Section 1.1, 1.2, 1.4:**  *(22)*

Let

*p*: I go jogging.

*q*: It is raining

*r*: Burf does not go jogging

*s*: I am awake

1. Write the following in terms of p, q, r and logical connectives (4)
   1. Burf and I go jogging
   2. I am not awake or I go jogging
   3. It is not raining, and I do not go jogging
   4. Burf goes jogging if I am awake
2. Write the following in terms of p, q, r and logical connectives (4)
   1. I go jogging if and only if it is not raining
   2. Being awake is necessary for me to go jogging
   3. If I am awake and it is raining, Burf goes jogging
   4. If it is raining is sufficient for me to not go jogging
3. Let

*p*: 4 <1

*q*: 2>1

*r*:

*s*: 4 < 4

Write the following in terms of p, q, r and logical connectives (3)

* 1. 4<1 or 2>1
  2. If then 4<4
  3. It is not the case that 4<4 or 4<1

1. Use a truth table to determine if each of the following is a tautology, a contingency, or an absurdity. (4)
2. Let

*p* and *q* are true

*r* and *s* are false

Find the truth value for each of the following (4)

* 2. ~

1. Write the negation of the following in good English (3)
   1. The weather is snowy and I will skip class
   2. I will not skip class or I will not pass the course.
   3. If Burf is not hungry then if he eats, he will be uncomfortable