

Quiz 1

The quizzes are designed to be 15 minutes. If necessary, you can take an extra 2-3 minutes just let your TA know if that will be necessary. Answer all the questions and be sure to justify your answer. Solutions that have no justification may receive deductions in points. Incorrect answers with some good justification may receive partial credit. Please attempt to be clear and concise in your response.

1. Write down the negation of the following statements. Do not write “It is not the case that...”. (5 pts. each)

(a) We are in the same class because we have the same major.

We have the same major but we are not in the same class

(b) Either my car will start or I will be late.

My car will not start and I will not be late

2. Determine the validity of the following statement (that is, decide whether the statement is true or false): (5 pts.)

If $1 = 0$, then $5^2 = 25$.

True, the hypothesis $1 = 0$ is false.

3. In the following compound statement, describe **all** atomic statements and find a truth assignment to each atomic statement which makes the compound statement *false*. (5 pts.)

My wife will get a job, or I will be poor and unhappy.

Atomic statement p: My wife will get a job

Atomic statement q: I will be poor

Atomic statement r: I will be unhappy

if p is false, q is true, and r is false, then the statement is false, since the first part is false and the second part (the disjunction) is also false.