

You MUST use good notation
and show appropriate work.

Math 102
(Section 3.4)

Name _____

1. Use truth tables to determine whether each of the following is a valid argument form.

$$\begin{array}{l} \text{a) } p \vee \sim q \\ \quad \quad \quad \sim q \\ \hline \therefore p \end{array}$$

$$\begin{array}{l} \text{b) } \sim p \rightarrow (q \vee p) \\ \quad \quad \quad \quad \quad \sim p \\ \hline \therefore q \end{array}$$

$$\begin{array}{l} \text{c) } p \rightarrow (q \vee r) \\ \quad \quad \quad \quad \quad \sim q \\ \hline \therefore p \vee r \end{array}$$

2. Use the valid and invalid forms as listed on page 118 of your textbook. In each
i) identify the form that applies, and ii) indicate whether the argument is valid or invalid.

a) If it is raining outside, then it is cloudy.
It is not cloudy.
Therefore it is not raining outside.

i) _____

ii) _____

b) If you score 100% on each exam, then you will earn an A in this class.
You did not score 100% on each exam.
Therefore, you did not earn an A in this class.

i) _____

ii) _____

c) If I study hard, then I will not fail the test.
If I do not fail the test, then I will get my driver's license.
Therefore, if I study hard, then I will get my driver's license.

i) _____

ii) _____

3. Use truth tables to test the argument given in problem 42, page 122, for validity.
First write down the argument form.