Math 300 **Fall 2024**

Lab Assignment #18

This lab is due at 12:30 PM on Wednesday, 11/13 and is worth 10 points. This part may be done individually, or in a group of 2, 3, or 4 people.

Prove that each of these statements is valid by constructing a truth table. The final column should be all T's. Feel free to write sideways to give yourself a little more room.

1) ((p –> q) AND p) –> q

2) ((p OR q) AND (not p)) –> q

3) ((p –> q) AND (q –> r)) –> (p –> r)

4) Prove that

not (p OR q)

and

(not p) AND (not q)

are logically equivalent, by finding a truth table for each, and noticing that the final columns are the same in each.