

## CS/MATH 278

### Lab 4

Due on Wednesday Sep 30 at 5:00 PM

Consider the following propositions.

**List of propositions:**

Prop 1 is  $(p \supset q) \cdot (r \vee s)$

Prop 2 is  $\sim ((a \supset b) \supset (a \vee b))$

Prop 3 is  $(p \supset q) \supset r$

Prop 4 is  $(d \vee c) \vee \sim (d \vee c)$

Prop 5 is  $(z \supset y) \cdot (y \supset z)$

Write a program that will do the following for each of the listed propositions:

1. Find all the possible combinations of truth-possibilities for the elementary propositions.
2. output how many of these combinations in part 1 make the given proposition true, and how many make it false.
3. On the screen, print the truth-possibilities of the proposition next to the corresponding truth values of the elementary propositions.

**Example:**

Prop 0 is  $p \vee q$ . The output should look like:

p	q	prop 0
T	T	T
T	F	T
F	T	T
F	F	F

- 3 combinations result in prop 0 being true.  
1 combination results in prop 0 being false.