University of Toronto, St. George Campus
Department of Computer Science

CSC 165H1 F
Fall 2006

Quiz #2

Name: _____ Marker's name: _____

Instructions to student: Using pen, write your answers in the space provided and leave the right column blank.
Instructions to marker: Write only in the right column, and clearly indicate the mark you believe is deserved. Award a full mark if the answer is fundamentally correct, otherwise award 0 and indicate the error (no $^1/_2$ marks).

Consider the following two statements:

(1) $P(x) \Rightarrow (Q(x) \Rightarrow R(x))$

(2) $(P(x) \wedge Q(x)) \Rightarrow R(x)$

For marking only:

a. Using any method you want (Venn diagrams, manipulating sentences, logical arithmetic, truth table, direct proof, etc.), prove that (1) implies (2).

2 marks:
1 for strategy,
1 for correctness

b. Using any method you want, prove that (2) implies (1).

2 marks:
1 for strategy,
1 for correctness

c. Write a statement using $\Leftrightarrow$ that summarizes the conclusions of (a) and (b).

1 mark: correctness

Total: _____