Computer Science CSC 238H
St. George Campus

Wednesday June 3 1998
University of Toronto

Quiz #3

"Quæro res graves iucundo ludo"
–Horace, paraphrased by Wheelock

First Name: ______________________________

Last Name: ______________________________

Student Number: ______________________

1. [1 mark] Fill in the missing lines and justifications in the following formal proof of the tautology $(Q \leftrightarrow P) \rightarrow [(R \wedge \sim P) \rightarrow (\sim Q \vee P)]$.

1.		(Hypothesis)
2.	$(Q \rightarrow P) \wedge (P \rightarrow Q)$	(1, Biconditional Simplification)
3.	$Q \rightarrow P$	( )
4.		(3, substitution in $A \rightarrow B \Leftrightarrow \sim B \rightarrow \sim A$)
5.		( )
6.	$\sim P \wedge R$	(5, substitution in $A \wedge B \Leftrightarrow B \wedge A$)
7.	$\sim P$	( )
8.		(4,7,)
9.		(8, Disjunctive Amplification)
10.		(5–9,)
11.	$(Q \leftrightarrow P) \rightarrow [(R \wedge \sim P) \rightarrow (\sim Q \vee P)]$	(1–10,)

2. [1 **bonus** mark] Explain the relevance of the quotation at the top of this page to this quiz.