Computer Science CSC 238H
St. George Campus

Wednesday May 27 1998
University of Toronto

Quiz #2

First Name: _____

Last Name: _____

Student Number: _____

1. [1 mark] Fill in the blanks in the following proof that $\sim (A \vee S) \vee (\sim\sim K \wedge \sim S)$ is equivalent to $\sim [\sim (A \to K) \vee S]$.

$\sim (A \vee S) \vee (\sim\sim K \wedge \sim S)$

$\Leftrightarrow$ _____ (_____)

$\Leftrightarrow$ $(\sim S \wedge \sim A) \vee (\sim\sim K \wedge \sim S)$ (_____)

$\Leftrightarrow$ $(\sim S \wedge \sim A) \vee (K \wedge \sim S)$ (Double negation)

$\Leftrightarrow$ _____ ($\wedge$ commutes)

$\Leftrightarrow$ $\sim S \wedge (\sim A \vee K)$ (_____)

$\Leftrightarrow$ _____ (Rewriting Implication)

$\Leftrightarrow$ $\sim S \wedge \sim\sim (A \to K)$ (Double negation)

$\Leftrightarrow$ _____ (DeMorgan)

$\Leftrightarrow$ $\sim [\sim (A \to K) \vee S]$ ($\vee$ commutes)