CS 330 (Fall 2013), Instructor: Carlotta Domeniconi

Quiz 1

Student's name:

1. [30 points]

Determine whether the following statements are **T**rue or **F**alse.

$\{a, b\} \subseteq 2^{\{a,b,\{a,b\}\}}$	**T**	**F**
$\{a, b, \{a, b\}\} - \{a, b\} = \{a, b\}$	**T**	**F**
$\emptyset \in \emptyset$	**T**	**F**

2. [30 points]

Define a binary relation P from $\Re$ to $\Re$ as follows:

$P = \{(x, y) | x \in \Re, y \in \Re, x = y^2\}$

Is P a function? Motivate your answer.

3. [40 points]

Is $(p \wedge q) \vee r \equiv p \wedge (q \vee r)$ a valid equivalence? Use truth tables to motivate your answer.