Name _____

Student number _____

CS 2SC3 and SE 2S03 Fall 2008

Quiz 3 Answer Key

Instructor: William M. Farmer

25 September 2008

You have 10 minutes to complete this quiz consisting of 2 pages and 5 questions. You may *not* use your notes and textbooks, nor may you use any calculators or other electronic devices. Circle the *best* answer for the multiple choice questions, and write the answer in the space provided for the other questions. Good luck!

(1) [1 pt.] According to the definitions given in class, a string is a special kind of list. Is this statement true or false?

    (a) | True. |

    (b) False.

(2) [1 pt.] In a typical program, almost all variables should be local. Is this statement true or false?

    (a) | True. |

    (b) False.

(3) [2 pt.] What is true about the following OCaml expression:

```
if (2 < 3) || (3 < 2) then 2.5 else 3
```

    (a) The expression's value is `true`.

    (b) The expression's value is 2.0.

    (c) The expression's value is 3 .

    (d) | The expression is undefined. |

(4) [3 pt.] What is the difference between a type of machine integers and a type of bignums?

Answer: A type of machine integers is a finite set of integers whose members can be represented in a machine word. A type of bignums is the complete infinite set of integers whose members are created as needed.

(5) [3 pts.] Write a piece of OCaml code that implements the function defined by

$$\lambda\, x : \mathbf{Z}\,.\, x^2 - 1.$$

Answer:

```
function x -> x * x - 1
```