

Name \_\_\_\_\_

Student number \_\_\_\_\_

## CS 2SC3 and SE 2S03 Fall 2008

### Quiz 4

Instructor: William M. Farmer

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You have 10 minutes to complete this quiz consisting of 2 pages and 4 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) [2 pt.] In a implementation of OCaml, type checking is done at

- (a) Design time.
- (b) Compile time.
- (c) Run time.
- (d) None of the above.

(2) [2 pt.] What is the effect of executing the following line of C code?

```
int x = 2;
```

- (a) A function named `int`, that returns 2 for any input, is defined.
- (b) The variable named `x` is bound to the value 2.
- (c) The variable named `x` is bound to a location where the value 2 is stored.
- (d) The value `true` is returned.

(3) [2 pt.] What is the type of the following OCaml expression?

```
function x -> [x]
```

**Answer:** `a' -> a' list`

- (4) [4 pts.] Write a piece of OCaml code that defines a function that implements the propositional operator  $|$  (known as *nand* to computer scientists and as the *Sheffer stroke* to logicians) defined by the following table:

$x$	$y$	$x   y$
true	true	false
true	false	true
false	true	true
false	false	true

**Answer:**

```
let nand x y =  
  if (x = true && y = true)  
  then false  
  else true ;;
```