Name _____

Student number _____

SE 2A04 Fall 2002

Surprise Quiz 2 Version A Answer Key

Instructor: William M. Farmer

You have 15 minutes to complete this quiz. You may use your notes and textbooks. You are welcome to write your answers in pencil. However, the instructor will not remark answers written in pencil if he thinks it is *possible* that the answer was erased and rewritten. Good luck!

(1) [10 pts.] The value of

$$(\lambda\, x : \mathbf{R}\ .\ x * x) = (\lambda\, y : \mathbf{R}\ .\ y^2)$$

is true.

(2) [10 pts.] The value of

$$\forall\, x : \mathbf{Z}\ .\ \mathsf{if}(x < 0, 2, -2) < 3$$

is true.

(3) [10 pts.] The value of

$$\forall\, s : \mathtt{Stack}\ .\ \mathtt{Top}(s)\downarrow$$

is false.

(4) [10 pts.] The value of

$$(\mathrm{I}x : \mathbf{R}\ .\ x^2 + 2 * x + 1 = 0) = 1$$

is false.

(5) [10 pts.] The value of

$$\mathtt{Take}(6, [a, b, c, d, e])$$

is $[a, b, c, d, e]$.

(6) [10 pts.] The value of

$$(\lambda\, k : \mathtt{List}\ .\ \mathtt{Element}(0, k))([a, b, c])$$

is a.

(7) [10 pts.] The value of

$$\forall\, L : \mathsf{lists}[\mathbf{R}]\ .\ L \neq \mathsf{cons}(\mathsf{hd}(L), \mathsf{tl}(L))$$

is false.

(8) [10 pts.] The value of

$$\mathsf{if}(2 < -1, 2 < -1, -1 < 2)$$

is true.

(9) [10 pts.] The value of

$$\exists\, s : \texttt{Stack}\ .\ \texttt{Top}(\texttt{Push}(0, s)) = -1$$

is false.

(10) [10 pts.] If the value of

$$\forall\, x, y : \mathbf{N}\ .\ f(x, y) = \mathsf{if}(y = 0, 0, x + f(x, y - 1))$$

is true, then the value of

$$f(2, 3)$$

is 6.