

Computer Science 131, Spring 2002

Assignment 3: Interpreter Introduction

Out: Monday, February 11

Due: Wednesday, February 13, in class

This assignment is also purely written, but involves the code for the simple interpreter described in class on February 11. A version of this code can be found on the course web page.

1. Give the SML representation of the program whose abstract syntax is written informally

```
let x be 1 in
  (let addx be ((y) => y+x) in
    (let x be 4 in
      (addx x)))
```

2. (Mentally) trace the progress of the above program through the interpreter; the answer should be 5. While doing so, list of all the substitutions that occur during the execution of the program. That is, each time the interpreter would do a substitution, write down the expression being substituted into, the variable being replaced, and the expression replacing that variable.

You may use the informal representation of abstract syntax (preferable) or the SML syntax.