You are advised to complete these problems before the midterm exam, although you can turn them in as late as 2002-09-23. A few more simple questions may be added up through 2002-09-15.

1. We had earlier studied inheritance and virtual methods in C++ using a sample program. Adapt the program to Java and report how Java deals with inheritance in this regard.

2. Complete the standard semantics for the construct (new $E_v$) in FLK!.

3. Show the “compiled code” that results when you invoke $E$ with top-level environment, continuation, and store on the expression

   \[
   \text{let a = (new 5)} \\
   \text{(begin)} \\
   \text{(write a (new 3))} \\
   \text{(read (read a)) )}
   \]

4. Write down standard semantics for the FLK! construct (exit $E$) where $E$ is expected to evaluate to an integer, like in C/C++. Informally, evaluation of an exit expression should discard all pending computation and the result of the program should be the integer value of $E$.

5. Desugar the exit construct using label and goto.