Lab 6

Name:

To be completed in the lab on Friday 05/21/10 or next Friday 05/28/10.

(i) Run your code, which performs timing of basic arithmetic operations. Report the results of your timing experiments.

```
int
+:   -:   *:   /:
float
+:   -:   *:   /:
double
+:   -:   *:   /:
```

How did you verify that your timing was performed properly?

(ii) Run your code, which performs timing of basic math operations. Report the results of your timing experiments.

```
rand:
log:
exp:
sin:
sqrt:
```
How did you verify that your timing was performed properly?

(iii) Run your C++ code, which performs timing of traversals of arrays, linked lists and full binary trees. Your code should follow the stages:

- Prompts the user for an input number and allocates an array, a linked list and a full binary tree of size $n$ (take for input only those numbers, which are sizes of full binary trees, e.g. 2097151 corresponds to depth 20, 4194303 to depth 21, and 8388607 to 22).
- Verifies that data structures were created. Performs initial traversals in which it assigns value 0 to all data fields, counts the number of fields/nodes in each of the data structures and reports the results of the count. Computes the depth of the binary tree and reports it.
- Performs timing of the traversals and reports timing results.

Run your program, report timing results you get and draw conclusions out of your experiments:

Demonstrate your work to the instructor/TA.
Instructor/TA’s initials: