ENEE 350 Homework Set 7
Programming Assignment 2
(Due: Class 17, Thurs., Mar. 29, 2012)

Write, assemble and run successfully on the simulator a Mac-1 subroutine **maxm(n,x)** that returns in the AC the address of the integer possessing the largest absolute value (i.e., magnitude) among the n integers in the array whose starting address is x. Your subroutine should be tested with the main program shown below, which defines how the parameters are passed.

```
       /main program                              |    /continued from below halt
           EXTRN maxm                             | data     57
ans1    RES    1                                  |           0
ans2    RES    1                                  |         129
ans3    RES    1                                  |           8
n1        7                                       |        -134
n2       10                                       |           3
n3        6                                       |          -2
start   loco   4020                               |         -29
        swap          /initialize sp              |          -3
        loco   n1                                 |         347
        push          /push address  n1           |          15
        loco   data                               |          -6
        push          /push array start address   |        -435
one     call   maxm                               |          13
        stod   ans1                               |          END     start
        insp    2                                 |
        loco   n2     /push address  n2           |
        push                                      |
        loco   data                               |
        addd   (4)                                |
        push          /push array start address   |
two     call   maxm                               |
        stod   ans2                               |
        insp    2                                 |
        loco   n3     /push address  n3           |
        push                                      |
        loco   data                               |
        addd   (6)                                |
        push          /push array start address   |
three   call   maxm                               |
        stod   ans3                               |
        insp   2                                  |
        halt                                      |
  /data array continues here but                  |
  / is shown in the above right hand column       |
```

Hand in a copy of the main program symbolic assembly listing, the subroutine symbolic assembly listing, the contents of (macro) memory after "load main sub" (i.e., of main.abs) before execution of the program, and the contents of memory after execution of the program. Highlight and comment upon the final answers. Specify what values are contained in the addresses specified by ans1, ans2, and ans3.