Name: _____________________
This is an open book quiz. It is to be turned in by 6:40 pm (or so).

There are two questions on this exam. Questions are given on the front and the back.

Please write your seat number (row and column) to the right. _________

**Problem 1 (72 points)**
Write four separate LC/2 assembly programs to compute the following four C statements. One of the four is printed on the back side of this page.

```
R4 = 4*R3 - 16 ;
R2 = R6 - R5 - 1 ;
if (R2 < 0)
    R3 = R7 + 150 ;
else
    R4 = R7 + 150 ;
```
while (R1 < R5)
    R1 = R1 + R1 ;

Problem 2 (28 points)
Show how write a trap routine with number $x37$ to discard, without even echoing, the next
single character typed to the keyboard. You must use the keyboard data and status registers.
Also, describe what memory location must be changed to make your code be executed when the
LC/2 instruction, TRAP $x37$, is processed. You can start with the code given below. Those are
the correct addresses for the keyboard data and status registers.

```
.ORIG $x3700
TRAP37

AKBSR .FILL xF400 ; Address of KBSR
AKBDR .FILL xF401 ; Address of KBDR
.END
```

PS: Did you remember to say which memory location must be changed?