Assignment 3:

Problems 2.9, 2.13, Matrix Add (see below)

Problem 2.9 Hint(s):

Memory word location J contains the number of tests, j, and memory word location N contains the number of students, n. The list of student marks begins at memory word location LIST in the format shown in Figure 2.14. The parameter Stride = 4(j + 1) is the distance in bytes between scores on a particular test for adjacent students in the list.

The Base with index addressing mode (R1,R2) is used to access the scores on a particular test. Register R1 points to the test score for student 1, and R2 is incremented by Stride in the inner loop to access scores on the same test by successive students in the list.

Matrix Add:

The following code adds two matrices A and B. Let A and B be matrices of size $M \times N$ (M rows and N columns). The sum of A and B is the matrix SUM with size $M \times N$.

```
for (i = 0; i < M; i++) {
   for (j = 0; j < N; j++) {
      SUM[i][j] = A[i][j] + B[i][j];;
   }
}
```

Now you need to implement the addition using assembly. Assume all matrix data is located at addresses A, B and SUM, as discussed in class (C compiler based dynamic allocation). Matrix sizes are located in memory at locations M and N.