EECS 370
Homework #1

Problem #1 [4 points]:

You have the height of a mountain in meters stored in register 1 on an LC2K4. You need to get the height in centimeters into register 2. Write a fragment of LC2K4 assembly code to do this. Your code should execute as few instructions as possible. You do not need to preserve register 1, and you may modify other registers as needed to hold temporary values.

Problem #2 [4 points]:

 Given the following mips assembly code:

```
add  $1, $0, $0
addi $2, $0, 50
andi $3, $2, 1
bne  $3, $0, 4
add  $1, $1, $2
subi $2, $2, 1
bne  $2, $0, -20
```

How many instructions would be exectuted by a mips processor running this code? Also provide a brief one or two sentence explanation of what the code is doing.

Problem #3 [4 points]:

Complete Exercise 3.9 from the class textbook.

Problem #4 [4 points]:

Complere textbook problem 3.19, on page 203.
        (Refer to the "In More Depth" section on pages 201-202)

Problem #5 [4 points]:

In the code below, for variables a to h, indicate where in the memory is each variable stored? (Stack, Heap, Static/Global, Text)

```
int a;
int b[20];
```

```
int foo(int f) {

  int c, *g;
  int d[100];
  static int e;

  g = (int *) malloc(sizeof(int) * 100);

  for (a = 0; a < 100; a++) {
    int h;
      /* ... */
  }
}
```