CS 271 Computer Architecture and Assembly Language
Self-Check for Lecture #5 Solutions

1. Why is it a good idea to implement a program's output first?
   As soon as the output is displayed, you can check to see if it fulfills layout specifications. The greatest advantage, however, is that the rest of the program development will be much easier to debug, since results will be displayed as the program's processes are implemented.

2. What's the result of the following code fragment? I.E., what registers are changed?

```
    mov   eax,100
    cdq
    mov   ebx,13
    div   ebx
```

Registers changed:

eax contains 7	(integer quotient of 100 / 13)
ebx contains 13	(assigned, unchanged by division)
edx contains 9	(integer remainder of 100 / 13)

Given the following constant definition and data segment:

```
MY_CREDITS = 12
.data
x     DWORD     12
y     DWORD     13
z     WORD      25
```

3. What's wrong with the following code segment statements?

`mov   ebx,z`	Size mismatch
`mov   y,x`	Can't move memory to memory
`mov   ebx, MY_CREDITS`	Nothing wrong here
`mov   MY_CREDITS,ebx`	Can't assign to a constant

Given the following data segment:

```
.data
intro_1    BYTE      "Welcome, "
userName   BYTE      "Fred."
intro_2    BYTE      "What's up?"
count      DWORD     0
```

4. What is displayed by the following code segment statements?

```
    mov   edx,OFFSET intro_1
    CALL  WriteString
    CALL  CrLf
    mov   edx,OFFSET userName
    CALL  WriteString
    CALL  CrLf
    mov   edx,OFFSET intro_2
    CALL  WriteString
    CALL  CrLf
```

```
Welcome, Fred.What's up?
Fred.What's up?
What's up?
```

Each call to WriteString displays memory until a zero is encountered.