CS 271 Computer Architecture and Assembly Language
Self-Check for Lecture #7
Example Solutions (others possible)

Solve each problem using the following data segment:

```
.data
k          DWORD      ?
n          DWORD      ?
yes        BYTE       "Yes",0
no         BYTE       "No",0
maybe      BYTE       "Maybe",0
```

Assume that variables have been initialized. Write MASM code to implement the following high-level pseudo-code repetition structures.

1.
```
while (k < n) {
     print (yes);
     k += 2;
}
```

2.
```
do {
     print (maybe);
     k += 1;
} while (k < n);
```

3.
```
for (k = 10; k > 0; k--)
     print (k);
```

4.
```
for (k = 10; k <= n; k++)
     print (no);
```

NOTE: You cannot **cmp** memory to memory. At least one of the operands must be a register or a constant.

1.
```
      mov   eax, k
again:
      cmp   eax, n
      jge   quitt
      mov   edx, OFFSET yes
      call  WriteString
      add   eax, 2
      jmp   again
quitt:
```

2.
```
      mov   eax, k
again:
      mov   edx, OFFSET maybe
      call  WriteString
      inc   eax
      cmp   eax, n
      jl    again
```

3.
```
      mov   ecx, 10
again:
      mov   eax, ecx
      call  WriteDec
      call  CrLf
      loop  again
```

4.
```
      mov   ecx, n
      sub   ecx, 10
      add   ecx, 1
again:
      mov   edx, OFFSET no
      call  WriteString
      loop  again
```