COE 205, Term 022

Computer Organization & Assembly Programming

Quiz# 4

Date: Tuesday, Apr. 15, 2003

Q1. Analyze the 8086 assembly program given below and determine what it is doing. Determine exactly what the program will output, assuming that the input entered is 62.

```
.MODEL SMALL
.STACK 32
.DATA
        CR        EQU    13
        LF        EQU    10
        msg1      DB     'Enter a 2-digit decimal number (00->99):','$'
        msg2      DB     CR,LF, 'Result= '
        result    DB     3 dup(?),'$'
.CODE
        MOV AX, @DATA
        MOV DS, AX
        MOV DX, offset msg1
        MOV AH, 9h
        INT 21H
        MOV AH, 1h
        INT 21H
        SUB AL, '0'
        MOV BL, 10
        MUL BL
        MOV CL, AL
        MOV AH, 1h
        INT 21H
        SUB AL, '0'
        ADD AL, CL
        MOV AH, 0
        ADD AX, AX
        DIV BL
        ADD AH, '0'
        MOV result+2, AH          The program asks the user to enter
        MOV AH, 0                 a 2-digit number and it then prints
        DIV BL                    its double. For the input 62, the
        ADD AH, '0'               program will output the following:
        MOV result+1, AH          Enter a 2-digit decimal number (00->99):62
        MOV AH, 0                 Result= 124
        DIV BL
        ADD AH, '0'
        MOV result, AH
        MOV DX, offset msg2
        MOV AH, 9h
        INT 21H
        MOV AX, 4C00h
        INT 21H
        END
```