PROGRAM TO SEPARATE AND ADD NIBBLES OF A BYTE

DATA SEGMENT

A1 DB 12h

A2 DB 00H

A3 DB 00H

A4 DB 00H

DATA ENDS

CODE SEGMENT

ASSUME CS:CODE,DS:DATA

START: MOV AX,DATA

 MOV DS,AX

 MOV AL,A1

 AND AL,0FH

 MOV A2,AL

 MOV CH,AL

 MOV AL,A1

 AND AL,0F0H

 MOV CL,04H

 ROL AL,CL

 MOV A3,AL

 ADD AL,CH

 MOV A4,AL

 INT 3

CODE ENDS

 END START

 SUM OF BYTES OF A 16 BIT NUMBER

DATA SEGMENT

A1 DW 1234h

A2 DB 00H

A3 DB 00H

A4 DB 00H

A5 DB 00H

DATA ENDS

CODE SEGMENT

ASSUME CS:CODE,DS:DATA

START: MOV AX,DATA

 MOV DS,AX

 MOV AX,A1

 MOV A2,AH

 MOV A3,AL

 MOV CL,00H

 ADD AH,AL

 JNC NEXT

 INC CL

 NEXT: MOV A4,AH

 MOV A5,CL

 INT 3

CODE ENDS

 END START

EXCHANGE NIBBLES OF A BYTE

DATA SEGMENT

A1 DB 12h

A2 DB 00H

DATA ENDS

CODE SEGMENT

ASSUME CS:CODE,DS:DATA

START: MOV AX,DATA

 MOV DS,AX

 MOV AL,A1

 MOV CL,04

 ROR AL,CL

 MOV A2,AL

 INT 3

CODE ENDS

 END START

TO EVALUATE 2X + Y WHERE X AND Y ARE BYTES

DATA SEGMENT

A1 DB 02H

X DB 12h

Y DW 45H

A3 DW 0000H

DATA ENDS

CODE SEGMENT

ASSUME CS:CODE,DS:DATA

START: MOV AX,DATA

 MOV DS,AX

 MOV AL,X

 MOV AH,00H

 MOV BL,A1

 MUL BL

 MOV A3,AX

 ADD AL,Y

 JNC NEXT

 INC AH

 NEXT: MOV A3,AX

 INT 3

CODE ENDS

 END START