

```
include emu8086.inc
org 100h
```

```
main:
```

```
    push ax
    push bx
    push cx
    push dx
    pusha
```

```
    PRINT "Give 3 Numbers:"
```

```
    mov cx,3
    mov bx,0
```

```
ignore: mov ah,8
```

```
    int 21h    ;waiting an input
    cmp al,'q'
    je telos
    cmp al,30h
    jl ignore
    cmp al,39h
    jle cont   ;accept only digits 0-9, a-f ,A-F
    cmp al,41h
    jl ignore
    cmp al,46h
    jle cont
    cmp al,61h
    jl ignore
    cmp al,66h
    jle cont
    jmp ignore
```

```
cont:
```

```
    mov ah,0eh
    int 10h
    cmp al,39h
    jle number
    cmp al,46h
    jle letter_big
```

```
    jmp letter
number:
    sub al,48 ;change ASCII value to real value
    jmp next
letter_big:
    sub al,55
    jmp next
letter:
    sub al,87
next:
    rol bx,4
    or bl,al
    loop ignore ;insert from keyboard in hex form
```

```
    push ax
enter:
    mov ah,8
    int 21h
    cmp al,'q'
    je telos
    cmp al,13
    jne enter
    pop ax
```

```
    mov al,bl
    and bl,0f0h
    ror bl,4
    and al,0fh
```

```
    mov dx,0
    add dl,al
    add dl,bl
    add dl,bh
    push dx
    mul bl
    mul bh
    push ax
```

```
push ax
push dx
MOV AH,9      ;Change line.
MOV DX, offset msg3
INT 21H
pop dx
pop ax
```

```
PRINT "A="
```

```
pop cx
pop bx
push cx
push ax
push dx
MOV CX,0
MOV AX,BX      ;!!!! BX had the number
BCD:           ;Start making the number decimal from hex.
MOV DX,0
DIV sixteen     ;Divide by 10,until you cannot do it anymore.
PUSH DX
INC CX          ;Hold the number of digits.
CMP AX,0
JNE BCD
MOV DX,0
```

```
BCD_DIG:
POP AX          ;Get in the reverse order the digits.
MOV DL,AL
cmp al,9
jg letter1
ADD DL,30H
jmp print
letter1: add dl,55
```

```
print:         ;Transform them into correct ASCII codes.
MOV AH,2
INT 21H        ;Print them one by one digit.
LOOP BCD_DIG
pop dx
pop ax
```

```
push ax
push dx
MOV AH,9      ;Change line.
MOV DX, offset msg3
INT 21H
pop dx
pop ax
```

```
PRINT "M="
```

```
pop bx
push ax
push dx
MOV CX,0
MOV AX,BX      ;!!!! BX had the number
BCD1:          ;Start making the number decimal from hex.
MOV DX,0
DIV sixteen     ;Divide by 10,until you cannot do it anymore.
PUSH DX
INC CX          ;Hold the number of digits.
CMP AX,0
JNE BCD1
MOV DX,0
BCD_DIG1:
POP AX          ;Get in the reverse order the digits.
MOV DL,AL
cmp al,9
jg letter2
ADD DL,30H
jmp print1
letter2: add dl,55
```

```
print1:        ;Transform them into correct ASCII codes.
MOV AH,2
INT 21H        ;Print them one by one digit.
LOOP BCD_DIG1
pop dx
pop ax
```

```
push ax
```

```
push dx
MOV AH,9      ;Change line.
MOV DX, offset msg3
INT 21H
pop dx
pop ax
```

```
popa
pop dx
pop cx
pop bx
pop ax
jmp main
```

telos:

```
ret
```

```
msg3 db 0ah,0dh,"$"
sixteen dw 0010H      ;Constant sixteen = 16.
ten dw 000AH          ;Constant ten = 10.
```