COAL

LAB10

23K2001

BCS-3J

Q1:

```asm
SumThree PROC
    PUSH ebp
    mov ebp, esp

    mov ecx, 3
    mov esi, 8
    L1:
        add eax, [ebp + esi]
        add esi, 4
    LOOP L1

    pop ebp
    ret 12
SumThree ENDP
END main
```

```
Microsoft Visual Studio Debug    X    +    v

Enter 3 numbers:
5
9
27

Sum of inputted 3 numbers: 41

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Press any key to close this window .
```

Lab10.asm

```
ArrayAvg PROC
    PUSH ebp
    mov ebp, esp

    mov ecx, [ebp + 8]
    mov esi, [ebp + 12]
    xor eax, eax
L1:
    add eax, [esi]
    add esi, TYPE array
loop L1
    mov ebx, [ebp + 8]
    xor edx, edx
    div ebx

    mov avg, eax
    pop ebp

    ret 8
ArrayAvg ENDP
END main
```

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```
Average of array: 8

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```

Lab10.asm

```asm
TITLE My Tenth Lab Tasks (Lab10.asm)
INCLUDE Irvine32.inc

.data
    input BYTE "Enter a number: ", 0
    res BYTE "Cube: ", 0
.code
main PROC
    mov edx, offset input
    call writestring
    call readint
    call LocalCube
    exit
main ENDP

LocalCube PROC
    enter 4, 0
    mov [ebp - 4], eax
    mov eax, [ebp - 4]
    mov ebx, eax
    mul ebx
    mul ebx
    mov edx, offset res
    call writestring
    call writedec
    call crlf
    leave
    ret
LocalCube ENDP

END main
```

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```
Enter a number: 6
Cube: 216

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```

Lab10.asm

```
checkEven PROC
    PUSH ebp
    mov ebp, esp

    mov ecx, [ebp + 8]
    mov esi, [ebp + 12]
L2:
    mov eax, [esi]
    cdq
    div x
    cmp edx, 0
    jnz allNotEven

    add esi, TYPE array
LOOP L2

    PUSH OFFSET array
    PUSH LENGTHOF array
    call smallestEven
    jmp done

allNotEven:
    mov edx, OFFSET uneven
    call writestring

done:
    pop ebp
    ret
checkEven ENDP
```

```
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Enter 5 numbers:
2
4
6
12
16
Smallest even number: 2
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```

Lab10.asm

```
    call smallestEven
    jmp done

allNotEven:
    mov edx, OFFSET uneven
    call writestring

done:
    pop ebp
    ret
checkEven ENDP
```

```
Microsoft Visual Studio Debug   ✕   +   ⌄

Enter 5 numbers:
2
4
5
6
64
Not all numbers are even.

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```

Lab10.asm

```
BubbleSort PROC
    PUSH ebp
    mov ebp, esp

    mov ecx, [ebp + 8]
    dec ecx
    mov esi, [ebp + 12]

outer:
    mov edx, ecx
    mov edi, esi

    inner:
        mov eax, [edi]
        mov ebx, [edi + TYPE array]

        cmp eax, ebx
        jle skip

        mov [edi], ebx
        mov [edi + TYPE array], eax
skip:
    add edi, TYPE array
    dec edx
    jnz inner

    dec ecx
    jnz outer

    pop ebp
    ret
BubbleSort ENDP
```

Microsoft Visual Studio Debug

```
Original array:
72 12 29 18 50 31 82
Sorted array:
12 18 29 31 50 72 82

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Press any key to close this window .
```