Cerritos College
Lab Week 7
Please type your answers

1- What will be the value in EDX after each of the lines marked (a) and (b) execute?

```
.data
one WORD 8002h
two WORD 4321h
.code
mov   edx,21348041h
movsx edx,one            ; (a)
movsx edx,two            ; (b)
```

2- What will be the value in EAX after the following lines execute?

```
mov eax,1002FFFFh
inc ax
```

3- What will be the value in EAX after the following lines execute?

```
mov  eax,30020000h
dec  ax
```

4- What will be the value in EAX after the following lines execute?

```
mov eax,1002FFFFh
neg ax
```

5- What will be the value of the Parity flag after the following lines execute?

```
mov  al,1
add  al,3
```

6- What will be the value of EAX and the Sign flag after the following lines execute?

```
mov  eax,5
sub  eax,6
```

7- In the following code, the value in AL is intended to be a signed byte. Explain how the Overflow flag helps, or does not help you, to determine whether the final value in AL falls within a valid signed range.

```
mov al,-1
add al,130
```

8- Using the XCHG instruction no more than three times, reorder the values in four 8-bit registers from the order A,B,C,D to B,C,D,A.

9- Transmitted messages often include a parity bit whose value is combined with a data byte to produce an even number of 1 bits. Suppose a message byte in the AL register contains 01110101. Show how you could use the Parity flag combined with an arithmetic instruction to determine if this message byte has even or odd parity.
10- Write code using byte operands that adds two negative integers and causes the Overflow flag to be set.
11- Write a sequence of two instructions that use addition to set the Zero and Carry flags at the same time.
12- Write a sequence of two instructions that set the Carry flag using subtraction.

Programming Question

Write a MASM code that uses the variables below and MOV instructions to copy the value from bigEndian to littleEndian, reversing the order of the bytes. The number's 32-bit value is understood to be 12345678 hexadecimal.

```
.data
bigEndian BYTE 12h,34h,56h,78h
littleEndian DWORD?
```

Document your code. Paste your code, a screenshot of the memory locations, a link to a YouTube video explaining your code, showing code assembling and the memory content