1.What exactly is being output by Sample Program 1 (i.e. what is the meaning of the output values)?

It outputs value a which is the starting address of shared memory. It also outputs value b which is the ending address of the shared memory.

```
martinnt@DESKTOP-VR5OL3E:/mnt/c/users/marti/desktop/coding/c$ gcc sp2.c -o sp2
martinnt@DESKTOP-VR5OL3E:/mnt/c/users/marti/desktop/coding/c$ ./sp2
Value a: 0x7ff797dd8000  Value b: 0x7ff797dd9000
martinnt@DESKTOP-VR5OL3E:/mnt/c/users/marti/desktop/coding/c$
```

2.Read the man pages; then describe the meaning / purpose of each argument used by the shmget() function call.

shmget() arguments are, key, size, and the shmflg. Key is used to identify a segment of shared memory so other processes don't have access to it. Size is used to declare the size of shared memory to be used in regards to bytes. Shmflg declares flags that control the creation and permissions in the shared memory segment.

3.Notice the use of macros to specify access permissions Describe two specific uses of the shmctl() function call.

S_IRUSR is the read permission and S_IWUSR is the write permission for the user.

4.Read the man pages, then use shmctl() to modify Sample Program 1 so that it prints out the size of the shared memory segment.

```
Value a: 0x7f2348e3a000  Value b: 0x7f2348e3b000
Size of shared memory segment: 4096 bytes
martinnt@DESKTOP-VR5OL3E:/mnt/c/users/marti/desktop/coding/c$
```

5. Submit screenshots

```
martinnt@DESKTOP-VR5OL3E:/mnt/c/users/marti/desktop/coding/c$ ./sp2
Shared Memory ID: 0
Value a: 0x7f7e1143a000  Value b: 0x7f7e1143b000
Size of shared memory: 4096 bytes
x
^C
martinnt@DESKTOP-VR5OL3E:/mnt/c/users/marti/desktop/coding/c$ ipcs -m

------ Shared Memory Segments --------
key         shmid      owner      perms      bytes      nattch     status
0x00000000 0           martinnt   600        4096       0

martinnt@DESKTOP-VR5OL3E:/mnt/c/users/marti/desktop/coding/c$
```

```
martinnt@DESKTOP-VR5OL3E:/mnt/c/users/marti/desktop/coding/c$ ipcrm -m 0
martinnt@DESKTOP-VR5OL3E:/mnt/c/users/marti/desktop/coding/c$ ipcs -m

------ Shared Memory Segments --------
key         shmid      owner      perms      bytes      nattch     status

martinnt@DESKTOP-VR5OL3E:/mnt/c/users/marti/desktop/coding/c$
```