#1. a) Write the SPARC assembly instructions to define the following global variables in the data segment:
   ```
   char c = 0x41;
   long bone = 420;
   double d = 420.420;
   ```

#2. What is the value (in hex) of %o1 after each set of instructions:

a)    set 0xFACEBABE, %o1
      sll %o1, 8, %o1

Value in %o1 at this point is 0x______________________________

b)    set 0xFACEBABE, %o1
      sra %o1, 24, %o1

Value in %o1 at this point is 0x______________________________

c)    set 0xFACEBABE, %o1
      set 0xC6C6C6C6C6, %o2
      and %o1, %o2, %o1

Value in %o1 at this point is 0x______________________________

d)    set 0xFACEBABE, %o1
      set 0xC6C6C6C6C6, %o2
      btog %o2, %o1

Value in %o1 at this point is 0x______________________________

(over)
#3. Write the equivalent unoptimized SPARC assembly language instructions to perform the following C code fragment.

```
C

x = 5678;

if ( x <= 420 ) {
    x = y % 13;
}

y = y + 4;

SPARC assembly

/* x is mapped to %l4 */

/* y is mapped to %l6 */
```

Now optimize your answer to eliminate any delay slots:

```
Optimized version of above SPARC assembly
```