#1. a) Fill in the blanks for the appropriate logical equivalence for the following compare/branch:

```
mov 420, %l2
cmp %l2, 606
bg label
nop
```

if ( ____________________  is  ____________________________    ____________________  )  then

goto label

b) Is the branch taken in the code snippet above? (Circle the correct answer.)  YES  NO

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

a) set 0x87654321, %o1
    sra %o1, 16, %o1

Value in %o1 at this point is 0x______________________________

b) set 0x87654321, %o1
    sll %o1, 8, %o1

Value in %o1 at this point is 0x______________________________

c) set 0x87651234, %o1
    set 0xA5A5A5A5, %o2
    xor %o1, %o2, %o1

Value in %o1 at this point is 0x______________________________

d) set 0x87651234, %o1
    set 0xA5A5A5A5, %o2
    bclr %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

\[ x = \text{foo}( -9876, 123 ); \]

/* x is mapped to %l2 */

SPARC assembly

Now optimize your answer to eliminate any delay slots.

**Optimized version of above SPARC assembly**

```