Name:
cs30x____
Score:

Quiz 2
CSE 30
Winter 2002

#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  0xC6C6C6C6, %o2
and  %o1, %o2, %o1
```

Value in %o1 at this point is **0x**_____

d)
```
set  0xFACEBABE, %o1
set  0xC6C6C6C6, %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