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

a) set 0xCAFEBABE, %o1
sra %o1, 8, %o1

Value in %o1 at this point is 0x___________________________

b) set 0xCAFEBABE, %o1
set 0xECA86420, %o2
xor %o1, %o2, %o1

Value in %o1 at this point is 0x___________________________

c) set 0xCAFEBABE, %o1
set 0xECA86420, %o2
and %o1, %o2, %o1

Value in %o1 at this point is 0x___________________________

#2. Fill in the blanks to correctly implement the following C code fragment in SPARC assembly.
Assume arg1 and arg2 are formal parameters available in the first two in registers.
Assume x is mapped to local register 0.
No optimization of delay slots.

```c
if ( arg1 != arg2 )
    x = 44;
else
    x = 99;
```

```sparc
    ____ %i0, %i1
    ____ L2
    ____
    mov 44, %l0  ! x = 44;
    ____ L4
    ____:
    mov 99, %l0  ! x = 99;
    ____:
```

Which of the following logic gate symbols represents …

- ____ NOR
- ____ NOT/Inverter
- ____ XOR
- ____ AND
#3. Write the equivalent unoptimized SPARC assembly language instructions to perform the following C code fragment. **Use the loop construct specified in class/Notes.**

```
C

for ( a = 77; a < 222; ++a )
{
    x = a + 42;
}
```

<table>
<thead>
<tr>
<th>SPARC assembly</th>
</tr>
</thead>
<tbody>
<tr>
<td>/* x is mapped to %l0 */</td>
</tr>
<tr>
<td>/* a is mapped to %l7 */</td>
</tr>
</tbody>
</table>

4b. Now optimize your answer from #4a to eliminate any delay slots:

**Optimized version of above SPARC assembly**

```
C

x = x * 77777;
```

<table>
<thead>
<tr>
<th>SPARC assembly</th>
</tr>
</thead>
<tbody>
<tr>
<td>/* x is mapped to %l0 */</td>
</tr>
</tbody>
</table>