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Name _____

cs30x _____

Student ID _____

Score: _____

Quiz 2
CSE 30
Spring 2008

#1. a) Write the SPARC assembly instructions to define the following **global** variables in the **data** segment:

```
char Coachella[] = "This Weekend";  
double tunes = 94.9;
```

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

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

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

b) set 0xFACEBABE, %o1
 set 0x4D3C2B1A, %o2
 xor %o1, %o2, %o1

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

c) set 0xFACEBABE, %o1
 set 0x4D3C2B1A, %o2
 and %o1, %o2, %o1

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

#3. Assume you run gdb on pal.
State how to set a breakpoint at the entry point in displayX():

Assume you correctly set this breakpoint and performed a run with correct command line arguments.
State how to print the value of the 2nd argument passed to displayX() in gdb:

#4. 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 ( x = 7154; x < 181; --x )
{
    a = x + 543;
}
```

SPARC assembly

```
/* x is mapped to %12 */
/* a is mapped to %14 */
```

#5a. Write the equivalent **unoptimized** SPARC assembly language instructions to perform the following C code fragment.

C

```
x = x % 7956;
```

SPARC assembly

```
/* x is mapped to %10 */
```

5b. Now optimize your answer from #5a to eliminate any delay slots:

Optimized version of above SPARC assembly