

Name:
cs30x_____
Score:

Quiz 2
CSE 30
Spring 2002

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

```
char c = 0x64;  
float f = 4.20;  
double d = 3.456;
```

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

a) set 0xB4F8B4F8, %o1
 sll %o1, 12, %o1

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

b) set 0xB4F8B4F8, %o1
 sra %o1, 20, %o1

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

c) set 0xB4F8B4F8, %o1
 set 0x69696969, %o2
 and %o1, %o2, %o1

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

d) set 0xB4F8B4F8, %o1
 set 0x69696969, %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	SPARC assembly
<code>i = -99;</code>	<code>/* i is mapped to %17 */</code>
<code>x = 4957;</code>	<code>/* x is mapped to %13 */</code>
<code>while (i != 17) {</code>	
<code> i = i + 49 + x;</code>	
<code> ++x;</code>	
<code>}</code>	

Now optimize your answer to eliminate any delay slots:

Optimized version of above SPARC assembly