

Signature \_\_\_\_\_

Name \_\_\_\_\_

cs30x \_\_\_\_\_

Student ID \_\_\_\_\_

Score: \_\_\_\_\_

**Quiz 3**  
**CSE 30**  
**Winter 2008**

- #1.**  
**a)** Write the appropriate **save** instruction to allocate stack space for the following local variables and any padding.

```
char          a;  
short         b;  
long          c;  
char          d;  
char          e;  
unsigned short f;
```

```
save _____ , _____ , _____  
(Use the formula, not an absolute value)
```

- b)** Write the appropriate unoptimized SPARC assembly instructions using the above local variables.

```
e = a;
```

---

```
f = 0xBABE;
```

---

```
c = b;
```

---

```
d = 'C';
```

(OVER)

**#2. a)** Write the appropriate **save** instruction to allocate stack space for the following local variable declaration.

```
unsigned long a[6];
```

```
save _____ , _____ , _____  
(Use the formula, not an absolute value)
```

**b)** Write the appropriate instructions to perform the following assignment statements.

```
a[5] = a[3];
```

```
_____  
_____
```

```
a[1] = a[4];
```

```
_____  
_____
```

```
unsigned long *ptr;          /* ptr mapped to %14 */
```

```
ptr = &a[2];
```

```
_____
```

```
++ptr;                       /* ptr mapped to %14 */
```

```
_____
```

```
unsigned long d = *ptr;      /* d mapped to %12; ptr to %14 */
```

```
_____
```

```
*ptr = d;                   /* d mapped to %12; ptr to %14 */
```

```
_____
```

**#3.** Give the equivalent C array expression for the following pointer expression.

\* (a + 4) is equivalent to \_\_\_\_\_ (equivalent array expression).