

Signature \_\_\_\_\_

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cs30x \_\_\_\_\_

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

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

**Quiz 3**  
**CSE 30**  
**Fall 2008**

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

```
short      a;  
long       b;  
short      c;  
int        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.

```
a = c;
```

---

```
f = 0xBABE;
```

---

```
b = d;
```

---

```
e = 'W';
```

(OVER)

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

```
int a[5];
```

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

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

```
a[4] = a[2];
```

```
_____  
_____
```

```
a[1] = a[0];
```

```
_____  
_____
```

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

```
ptr = &a[3];
```

```
_____
```

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

```
_____
```

```
int 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 + 5) is equivalent to \_\_\_\_\_ (equivalent array expression).