

Signature _____

Name _____

cs30x _____

Student ID _____

Score: _____

Quiz 3
CSE 30
Winter 2005

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

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

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

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

```
f = 8675309;
```

```
a = 0xBABE;
```

```
d = 'A';
```

```
c = e;
```

(OVER)

#2.

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

```
char a[6];
```

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

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

```
a[1] = a[3];
```

```
_____  
_____
```

```
a[2] = a[5];
```

```
_____  
_____
```

```
char *ptr; /* ptr mapped to %12 */
```

```
ptr = &a[0];
```

```
_____
```

```
ptr++; /* ptr mapped to %12 */
```

```
_____
```

```
char x = *ptr; /* x mapped to %10; ptr to %12 */
```

```
_____
```

```
*ptr = x; /* x mapped to %10; ptr to %12 */
```

```
_____
```

#3. Write the equivalent C expression the compiler really uses for an array index access.

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

a[i] is equivalent to _____ in C.