

Signature _____

Name:
cs30x_____

Student ID _____

Score:

Quiz 3
CSE 30
Spring 2004

#1.

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

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

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

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

```
d = 8675309;
```

```
b = 0xBABE;
```

```
a = 'A';
```

```
e = c;
```

(OVER)

#2.

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

```
double 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];
```

```
_____  
_____
```

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

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

```
_____  
_____
```

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

```
_____  
_____
```

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

```
_____  
_____
```

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

```
_____  
_____
```

#3. Explain what it means when we say pointer arithmetic uses scaling.