

Signature _____

Name _____

cs30x _____

Student ID _____

Score: _____

Quiz 3
CSE 30
Spring 2007

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

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

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

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

```
d = b;
```

```
a = -9876;
```

```
e = 'B';
```

```
a = c;
```

(OVER)

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

```
short a[9];
```

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

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

```
a[7] = a[4];
```

```
_____  
_____
```

```
a[5] = a[1];
```

```
_____  
_____
```

```
short *ptr; /* ptr mapped to %15 */
```

```
ptr = &a[1];
```

```
_____  
_____
```

```
++ptr; /* ptr mapped to %15 */
```

```
_____  
_____
```

```
short d = *ptr; /* d mapped to %12; ptr to %15 */
```

```
_____  
_____
```

```
*ptr = d; /* d mapped to %12; ptr to %15 */
```

```
_____  
_____
```

#3. Write the equivalent C expression for an array index access. Remember scaling is done automatically by the compiler.

```
float a[10];
```

```
a[i] is equivalent to _____ (equivalent pointer expression) .
```