

Signature _____

Name _____

cs30x _____

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Score: _____

Quiz 3
CSE 30
Fall 2004

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

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

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

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

```
b = f;
```

```
d = 9876;
```

```
c = 'B';
```

```
a = e;
```

(OVER)

#2.

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

```
float a[8];
```

```
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];
```

```
_____  
_____
```

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

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

```
_____
```

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

```
_____
```

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

```
_____
```

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

```
_____
```

#3. Explain why accessing each element of an array/vector with loops using standard array notation like `a[i]` may be less efficient than using a traversal pointer to do the equivalent.