Quiz 3  
CSE 30  
Winter 2002

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

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

    save  __________ ,  ______________________________  ,  __________  
    (Use the formula, not an absolute value)

b) Write the appropriate instruction to put the value in local variable d into register %l0.

    ____________________________  !  d -> %l0

c) Write the appropriate instruction to place the value in local variable b into register %l0.

    ____________________________  !  b -> %l0

d) Write the appropriate instructions to store the value -4200 in local variable c as defined above (hint: you cannot assign an immediate constant value directly to memory Ñ you can only store from a register to memory).

    ____________________________  !  -4200 -> %l0
    ____________________________  !  %l0 -> local variable c

e) Write the appropriate instructions to store the value 0x911 in local variable a as defined above (same hint as above).

    ____________________________  !  0x911 -> %l0
    ____________________________  !  %l0 -> local variable a

(OVER)
#2.

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

```c
int a[9];
```

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

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

```c
a[7] = a[3];
```

```

________________________
```

```c
a[2] = a[1];
```

```

________________________
```

```c
int *ptr; /* ptr mapped to %l1 */
```

```
ptr = &a[6];
```

```
________________________ ! &a[6] -> %l1
```

```c
--ptr; /* ptr mapped to %l1 */
```

```
________________________ ! --ptr
```

```c
i = *ptr; /* i mapped to %l0; ptr to %l1 */
```

```
________________________ ! *ptr -> %l0
```

```c
*ptr = i; /* i mapped to %l0; ptr to %l1 */
```

```
________________________ ! %l0 -> *ptr
```