

Signature \_\_\_\_\_

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Score: \_\_\_\_\_

**Quiz 1**  
**CSE 30**  
**Winter 2007**

#1. Show the representation of  $-322_{10}$  in the following representation schemes (assume 16-bit words):

a) sign magnitude

b) one's-complement

c) two's complement

#2. Convert  $241_{10}$  into (assume 16-bit words):

a) binary

b) octal

c) hexadecimal

#3. Fill in the Condition Code bits for the following addition instructions (8-bit two's-complement numbers):

```
  00110110
+ 11001010
-----
```

```
  01101010
+ 01011001
-----
```

```
  N   Z   V   C
-----
|   |   |   |   |
-----
```

```
  N   Z   V   C
-----
|   |   |   |   |
-----
```

(over)

**#4. Powers of 2**

$$32M = 2^{\text{---}}$$

$$2^{17} = \text{_____} \quad (\text{in terms of K, M, G, etc.})$$

**#5.** List the five C/C++ Runtime Environment areas in the order as discussed in class that a typical Unix system will lay them out, and in particular the SPARC architecture lays them out:

- A - Stack
- B - Heap
- C - BSS
- D - Data
- E - Text

