Pierce College

CSIT 516
Midterm Examination #1
18 March 2008

Name: _____

1. **Convert the following unsigned numbers:**

   a. 43_{10} ➔ _____$_5$

   b. 43_5 ➔ _____$_{10}$

   c. 43_{10} ➔ _____$_{13}$

   d. 43_5 ➔ _____$_{13}$

2. Convert the following from sign & magnitude to <u>2's complement binary</u> (signed) representation:

a. -84_{16} ➔ _____$_2$ **12 bit register**

b. -84_{10} ➔ _____$_2$ **12 bit register**

3. Convert the following from <u>2's complement</u> (signed) representation
in 12 bit registers
to the sign & magnitude representation normally used in base 10:

a. $E18_{16}$ ➔ _____$_{10}$

b. 011010111011_2 ➔ _____$_{10}$

c. $6B3_{16}$ ➔ _____$_{10}$

d. 101010101101_2 ➔ _____$_{10}$

4. Compute the following values:

a. $65AF + 12FB_{base16}$

b. $65AF - 12FB_{base16}$

c. $576 + 557_{base8}$

d. $576 - 557_{base8}$

5. Determine the effect of the following machine language program

```
. 0000  D1001D
. 0003  F10009
. 0006  C10017
. 0009  710019
. 000C  A1001B
. 0012  510016
. 0015  00
. 0016  00
. 0017  0005
. 0019  0003
. 001B  0030
. 001D  A1
```

6. Perform the following computations assuming a 13-bit, 2's complement binary representation:

a. 1101110101110
ADD 1110001101110

R = ☐

C = ☐

V = ☐

b. 1F15
ADD 1D21

R = ☐

C = ☐

V = ☐

c. 1001110101110
SUB 0111101101110

R = ☐

C = ☐

V = ☐

d. 1A15
SUB 1F21

R = ☐

C = ☐

V = ☐