

## Homework #3 Answers

1. Compute the following values:

$$\begin{array}{r} \text{a. } 65AF \\ +12FB_{\text{base16}} \\ \hline 78AA \end{array}$$

$$\begin{array}{r} \text{b. } 65AF \\ -12FB_{\text{base16}} \\ \hline 52B4 \end{array}$$

$$\begin{array}{r} \text{c. } 576 \\ +557_{\text{base8}} \\ \hline 1355 \end{array}$$

$$\begin{array}{r} \text{d. } 576 \\ -557_{\text{base8}} \\ \hline 17 \end{array}$$

**2. Determine the effect of the following machine language program**

- . 0000 D1001D
- . 0003 F10009
- . 0006 C10017
- . 0009 710019
- . 000C A1001B
- . 0012 51001C
- . 0015 00
- . 0016 00
- . 0017 0005
- . 0019 0003
- . 001B 0030
- . 001D A1

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

a.        1101110101110  
ADD    1110001101110  
R = 1 1000 0001 1100  
C = 1  
V = 0

b.        1F15  
ADD    1D21  
R = 1 C36  
C = 1  
V = 0

c.        1001110101110  
SUB    0111101101110  
R = 0 0100 0100 0000  
C = 1  
V = 1

d.        1A15  
SUB    1F21  
R = 1AF4  
C = 0  
V = 0