Assembly Language
Assignment 1

Part 2:

1. (2 points) Convert 0x7FC to decimal

   7*(16^2) + F*(16^1) + C*(16^0)
   (7*256) + (15*16) + (12*1)
   1792+240+12 = 2044

2. (2 points) Convert 0xEA56 to binary.

   E=1110, A=1010, 5=0101, 6=0110
   1110 1010 0101 0110

3. (2 points) Convert 1111 1101 0110 1011 0001 1010 1001 1101 to hexadecimal

   F D 6 B 1 A 9 D

4. (4 points) Given the 8-bit, signed number 01101110, what is its decimal equivalent? What is its negative (in binary)?

   64+32+8+4+2 = 110 (decimal equivalent)
   -110 = 10010010 (negative in binary)

5. (2 points) What is the largest and smallest number that can be represented by a 8-bit signed number?

   Largest:
   (2^(8-1)) -1 = 127

   Smallest:
   -(2^(8-1)) -1 = -128

6. (2 points) What is the largest and smallest number that can be represented by a 16 bit Unsigned number?

   Largest: (2^16)-1 = 65,535
   Smallest: 0

7. (2 points) Convert the 16-bit, signed number 0xADF3 to decimal.

   ADF3 -> 10 13 15 3 = 1010 1101 1111 0011 -> 0101 0010 0000 1101 = 1+4+8+512+4096+16384= 21,005

8. (2 points) How many bytes are required to represent -513 in two's compliment?

   2 bytes

9. (1 points) What is the binary representation of this number?

   513= 0000 0010 0000 0001 --> -513=1111 1101 1111 1111

10. (1 points) What is the hexadecimal representation of this number?

    1111 1101 1111 1111
    F D F F