

Homework #2: Due Monday Jan 28

1. Convert the following decimal numbers to 8-bit 2's complement
 - a. 38
 - b. -127
 - c. 122
 - d. -114
 - e. 131

2. Repeat problem 2, but convert the decimal numbers to sign-magnitude.

3. Convert the following unsigned 4-bit 2's complement numbers to 8 bits
 - a. 0110
 - b. 1110

4. Perform addition on these 4-bit ($N=4$) unsigned numbers. Indicate whether overflow occurs.
 - a. $1101 + 0110$
 - b. $1010 + 0100$

5. Perform addition on these 8-bit ($N=8$) unsigned numbers. Indicate whether overflow occurs.
 - a. $10011001 + 01000110$
 - b. $11010110 + 11101001$

6. Convert the following decimal numbers to 6-bit 2's complement and add. Indicate whether overflow occurs. $N=6$.
 - a. $18 + 7$
 - b. $19 + 18$
 - c. $-8 + 13$
 - d. $5 + (-31)$

7. Convert the following decimal numbers to 5-bit 2's complement and subtract. Indicate whether overflow occurs. $N=5$.

a. $10 - 6$

b. $9 - 14$

c. $-7 - 10$

d. $5 - (-9)$