Convert the following numbers from decimal to binary:

a) 3 is **11**
b) 7 is **111**
c) 10 is **1010**
d) 50 is **110010**
e) 94 is **1011110**
f) 192 is **11000000**

Convert the following numbers from binary to decimal:

a) 10 is **2**
b) 1110 is **14**
c) 111010 is **58**
d) 11100011 is **227**

Convert each of the decimal numbers from 1 to two's compliment numbers with the min number of bits possible.

a) 3 is **011**
b) 7 is **0111**
c) 10 is **01010**
d) 50 is **0110010**
e) 94 is **01011110**
f) 192 is **011000000 (9 bits needed)**

Convert to an 8-bit two's compliment number, but have each be negative of its original value.

a) -3 is **11111101**
b) -7 is **11111001**
c) -10 is **11110110**
d) -50 is **11001110**
e) -94 is **10100010**
f) -192 is **101000000 (9 bits needed)**

Add 01100110 and 01011100. What happens when you add two very large 8-bit two's complement numbers together?

11000010

When you add two large 8-bit numbers you get another large number that would be equal to their decimal notation. In this case, 8-bit would make them a negative number, because it would force a leading 1.

Add 11100011 and 10101010. What happens if you add two very large negative 8-bit two's complement numbers together?

110001101

In this case, it results in a large number that cannot be contained within an 8-bit range. To adequately fit, it would require a range of 9-bit.