Convert the following numbers from decimal to binary:

1. 3 is **11**
2. 7 is **111**
3. 10 is **1010**
4. 50 is **110010**
5. 94 is **1011110**
6. 192 is **11000000**

Convert the following numbers from binary to decimal:

1. 10 is **2**
2. 1110 is **14**
3. 111010 is **58**
4. 11100011 is **227**

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

1. 3 is **011**
2. 7 is **0111**
3. 10 is **01010**
4. 50 is **0110010**
5. 94 is **01011110**
6. 192 is **011000000 (9 bits needed)**

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

1. -3 is **11111101**
2. -7 is **11111001**
3. -10 is **11110110**
4. -50 is **11001110**
5. -94 is **10100010**
6. -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.**