Binary Math Practice

1. Convert the following decimal numbers into binary
   1. 76 = 0100 1100
   2. 156 = 1001 1100
   3. 95 = 0101 1111
   4. 5 = 0101
   5. 228 = 1110 0100
2. Convert the following binary numbers into decimal numbers
   1. 0001 1001 = 25
   2. 0001 1010 0100 = 420
   3. 0001 0101 = 21
3. Find the Sum of the following binary numbers
   1. 0010 + 0011 = 0101
   2. 0001 + 0011 = 0100
   3. 1010 + 0011 = 1101
   4. 0010 0100 + 0001 0101 = 0011 1001
   5. 1010 1010 + 0101 0101 = 1111 1111
4. Convert the following positive binary numbers into negative binary numbers using Two’s complement
   1. 0000 0101 = 1111 1011
   2. 0000 1010 = 1111 0110
   3. 0000 1111 = 1111 0001
   4. 0000 1001 = 1111 0111
5. Convert the following negative binary numbers into positive binary number’s using Two’s complement
   1. 1111 1110 = 0000 0010
   2. 1111 0000 = 0001 0000
   3. 1100 1110 = 0011 0010
6. What will the following evaluate to
   1. 10 & 15 = 10
   2. 16 & 25 = 16
   3. 32 | 7 = 39
   4. 16 | 32 = 48
   5. ~6 = 9
   6. ~10 = 5
   7. 16 ^ 7 = 25
   8. 10 ^ 15 = 5
   9. 5 << 2 = 20
   10. 1 << 6 = 64
   11. 66 >> 1 = 33