In a computer system that represents all integer quantities using two’s complement form, the most significant bit has a negative place-weight. For an eight-bit system, the place weights are as follows:

-27  26  25  24  23  22  21 20

Given this place-weighting, convert the following eight-bit two’s complement binary numbers into decimal form:

1. 010001012 =

1. 1 0 0 0 1 0 1



64+4+1= 69

2. 011100002 =

0 1 1 1 0 0 0 0



64+32+16 = 112

3.110000012 =

1 1 0 0 0 0 0 1



-128+ 64+1 = -63

4.100101112 =

1 0 0 1 0 1 1 1



-128+16+4+2+1= - 105

5.010101012 =

0 1 0 1 0 1 0 1



64+16+4+1 = 85