

120 BINARY ARITHMETIC: BASIC CONVERSIONS

Conversion of decimal numbers to binary

The first step in converting decimal numbers to binary numbers is to determine the highest value binary column at or below the value of the target decimal number. For example, if we wish to convert decimal 25 to binary the highest column we need to use is the 16 column. We place 1 in the 16 column and then subtract 16 from 25 to see what decimal value remains to be converted to binary. This is $25 - 9$, and we can see immediately that this is represented in binary by placing 1 the 8 binary column and 1 in the 1 column. The resultant binary number to represent decimal 25 is 11001.

Exercises Set 2: convert decimal numbers to binary

	128	64	32	16	8	4	2	1	
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
17									
21									
23									
25									
	128	64	32	16	8	4	2	1	

	1024	512	256	128	64	32	16	8	4	2	1	
18												
19												
20												
34												
47												
63												
102												
98												
126												
214												
183												
148												
263												
235												
219												
	1024	512	256	128	64	32	16	8	4	2	1	