Addition and Subtraction in Binary

The following example shows two binary numbers being added:

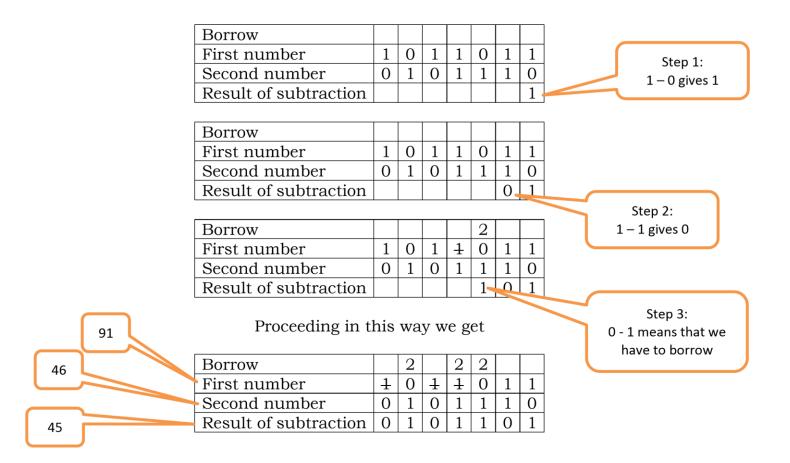
										ı		
		Carry										
		First number	0	0	1	1	1	1	0			
		Second number	1	0	0	1	0	1	1			Step 1:
		Result of addition							1-		- 0	+ 1 gives 1
		Carry					1					
		First number	0	0	1	1	1	1	0			
		Second number	1	0	0	1	0	1	1			
		Result of addition						0	1			
												Step 2:
		Carry				1	1					ives 0 carry 1
		First number	0	0	1	1	1	1	0		1118	ives o carry 1
		Second number	1	0	0	1	0	1	1			
		Result of addition					0	0	1			
		Carry			1	1	1				S	tep 3:
		First number	0	0	1	1	1	1	0			+ 1 gives 0
		Second number	1	0	0	1	0	1	1		c	arry 1
		Result of addition				1	0	0	1			
	30	Proceeding in this way we get:										Step 4:
	30										1+	1 + 1 gives 1
75		Carry		1	1	1	1					carry 1
(3)		First number	0	0	1	1	1	1	0			
		Second number	1	0	0	1	0	1	1			
105		Result of addition	1	1	0	1	0	0	1			
103						•				'		

Exercise in Addition

Add the following binary numbers. Then check your result by using decimal numbers.

- a. 1010001 and 0101110
- b. 1011011 and 1011100

The following example shows subtraction:



Exercise in Subtraction

Perform the following binary subtractions. Then check your results by using decimal numbers:

- a. 10001101 00101100
- b. 10000101 01010111