

Binary Subtraction

How to perform binary subtraction

In arithmetic, subtraction can be done by adding a negative number.

Calculate $18 - 8$, using 8-bit binary and two's complement.

Step 1 18 converted to 8-bit binary

0001 0010

Step 2 8 in 8 bit binary

00001000

Step 3 -8 converted to two's complement 8-bit binary

1111 1000

Step 4 Addition performed:

	-128	64	32	16	8	4	2	1	
	1	1	1	1	1	0	0	0	-8
+	0	0	0	1	0	0	1	0	18
	0	0	0	0	1	0	1	0	

Result of **0000 1010**



Binary Subtraction

64-12

Step 1 work out + 12

Step 2 work out - 12

Step 3 work out 64

Step 4 Add together
-12 and 64

FLIP →

~~1~~
ignore

128	64	32	16	8	4	2	1
0	0	0	0	1	1	0	0
1	1	1	1	0	1	0	0
0	1	0	0	0	0	0	0
0	0	1	1	0	1	0	0

Questions

Calculate $100 - 48$, using 8-bit binary and two's complement.