XOR TRUTH TABLE -

M	B	M⊕B
0	0	0
0	1	1
1	0	1
1	1	0

$\Rightarrow B \oplus 0 = B$

& $B \oplus 1 = \overline{B}$

1) When **M=0**, value of B is passed as it is from the XOR gate ; Cin for first full adder is 0 and carry generated is passed on to next full adders & hence process is repeated which the **addition** of the 2 4-bit numbers.

2) When **M=1**, value of compliment of B is passed ~~as it is~~ from the XOR gate ; Cin for first full adder is 1 then the operation at full adder will be $\underbrace{\overline{B}+1}_{\text{2's complement of B without sign bit}}+A$

which is equivalent to A−B

which, finally results in **subtraction** of the 2 4bit numbers.