

Addition of positive and negative (+ve) + (-ve):

Ex.2- Find the sum of $(+27)_{10} + (-23)_{10}$

Here we see that subtrahend is negative hence we calculate 2's complement of 23.

$(+27)_{10} \rightarrow$	0	0	0	1	1	0	1	1
$(-23)_{10} \rightarrow$ <small>In 2's complement</small>	1	1	1	0	1	0	0	1
+								
$(+04)_{10} \leftarrow$	0	0	0	0	0	1	0	0

Thus the result is- $(00000100)_2 = (+04)_{10}$

Note that $(+27)_{10} + (-23)_{10}$ will also be $(+04)_{10}$

Addition of negative and positive (-ve) + (+ve):

Ex.3- Find the sum of $(-27)_{10} + (+23)_{10}$

Here we see that minuend is negative hence we calculate 2's complement of 27.

$(-27)_{10} \rightarrow$ <small>In 2's complement</small>	1	1	1	0	0	1	0	1
$(+23)_{10} \rightarrow$	0	0	0	1	0	1	1	1
+								
$(-04)_{10} \leftarrow$ <small>In 2's complement</small>	1	1	1	1	1	1	0	0

Thus the result is- $(11111100)_2 = (-04)_{10}$ **{2's of 00000100}**

Note that $(-27)_{10} + (+23)_{10}$ will also be $(-04)_{10}$

Addition of negative and negative (-ve) + (-ve):

Ex.4- Find the sum of $(-27)_{10} + (-23)_{10}$

Here we see that both the minuend and the subtrahend are negative hence we calculate 2's complement of both.

$(-27)_{10} \rightarrow$ In 2's complement	1	1	1	0	0	1	0	1
$(-23)_{10} \rightarrow$ In 2's complement	1	1	1	0	1	0	0	1
	+							
$(-50)_{10} \leftarrow$ In 2's complement	1	1	0	0	1	1	1	0

Thus the result is- $(11001110)_2 = (-50)_{10}$ **{2's of 00110010}**

Note that $(-27)_{10} + (-23)_{10}$ will also be $(-50)_{10}$

Assignment:

- 1.** Add $(+34)_{10}$ and $(-41)_{10}$ and find the sum.
- 2.** Add $(-34)_{10}$ and $(+41)_{10}$ and find the sum.
- 3.** Add $(-34)_{10}$ and $(-41)_{10}$ and find the sum.