

$0011\ 0101_{(2)} + 0111\ 1010_{(2)}$ 10101111_2	$1110\ 1001_{(2)} + 1010\ 0101_{(2)}$ 110001110_2
$0010\ 1110_{(2)} + 0001\ 1111_{(2)} + 0101\ 1001_{(2)}$ 10100110_2	$0111\ 1010_{(2)} - 0101\ 0101_{(2)}\ (2's\ Complement)$ 100100101_2
$0100\ 0000_{(2)} - 0000\ 0001_{(2)}\ (2's\ Complement)$ 10011111_2	$0101\ 1111_{(2)} - 0110\ 1011_{(2)}\ (2's\ Complement)$ 11110100_2
$0000\ 1100_{(2)} - 0010\ 0111_{(2)}\ (2's\ Complement)$ 11100101_2	

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Binary Arithmetic Worksheet

$$\begin{array}{r} \checkmark 1) \quad \overset{0}{0}\overset{0}{0}\overset{1}{1} \ 0101 \\ + \quad 0111 \ 1010 \\ \hline 10101111 \end{array}$$

$$\begin{array}{r} \checkmark 2) \quad \overset{1}{1}\overset{1}{1}0 \ 1001 \\ + \quad 1010 \ 0101 \\ \hline 11000 \ 1110 \end{array}$$

$$\begin{array}{r} \checkmark 3) \quad \overset{0}{0}\overset{0}{0}10 \ \overset{1}{1}\overset{1}{1}0 \\ + \quad 0001 \ 1111 \\ \hline 01001101 \end{array}$$

$$\begin{array}{r} \checkmark 4) \quad 0111 \ 1010 \\ - \quad 0101 \ 0101 \\ \hline \end{array}$$

$$\begin{array}{r} \overset{0}{0}\overset{1}{1}00 \ \overset{1}{1}01 \\ + \quad 0101 \ 1001 \\ \hline 10100110 \end{array}$$

$$\begin{array}{r} 10101010 \\ + \quad 1 \\ \hline 10101011 \leftarrow 2's \end{array}$$

$$\begin{array}{r} \overset{1}{1}\overset{1}{1}1 \ 1010 \\ + \quad 1010 \ 1011 \\ \hline \text{Overflow} \rightarrow \boxed{1}00100101 \end{array}$$

$$\begin{array}{r} \checkmark 5) \quad 0100 \ 0000 \\ - \quad 0000 \ 0001 \\ \hline \end{array}$$

$$\begin{array}{r} \checkmark 6) \quad 0101 \ 1111 \\ - \quad 0110 \ 1011 \\ \hline \end{array}$$

$$\begin{array}{r} 1111 \ 1110 \\ + \quad 1 \\ \hline 2's \rightarrow 1111 \ 1111 \end{array}$$

$$\begin{array}{r} 10010100 \\ + \quad 11 \\ \hline 10010101 \end{array}$$

$$\begin{array}{r} \overset{0}{0}100 \ 0000 \\ + \quad 1111 \ 1111 \\ \hline \end{array}$$

$$\begin{array}{r} \overset{0}{0}\overset{1}{1}0 \ \overset{1}{1}\overset{1}{1}1 \\ + \quad 10010101 \\ \hline 11110100 \end{array}$$

$$\text{Overflow} \rightarrow \boxed{1}0011 \ 1111$$

✓ 6)

$$\begin{array}{r} 00001100 \\ - 00100111 \\ \hline \end{array}$$

$$\begin{array}{r} 11011000 \\ + 1 \\ \hline 2's \rightarrow 11011001 \end{array}$$

$$\begin{array}{r} 00001100 \\ + 11011001 \\ \hline 11100101 \end{array}$$