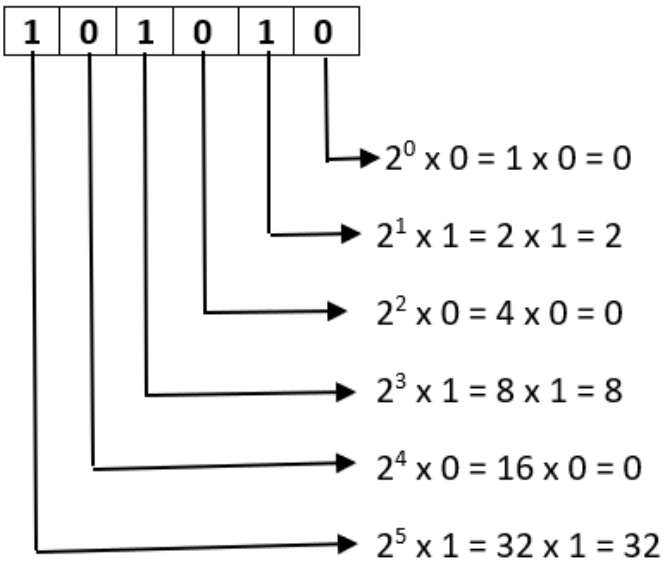
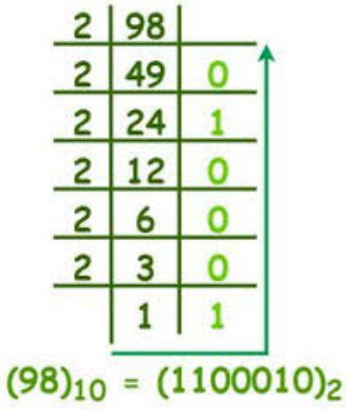
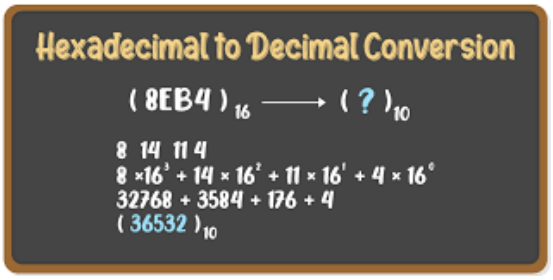
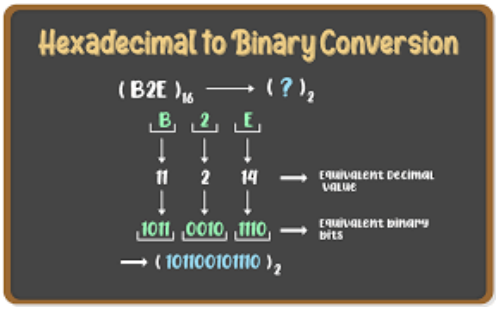
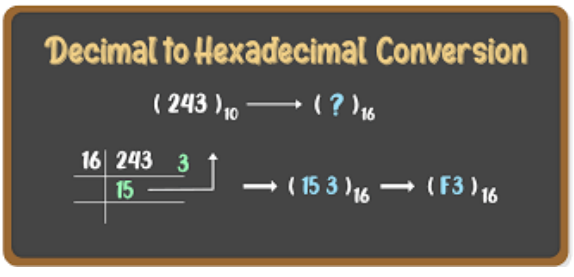


Resultant decimal number= 0+2+0+8+0+32 = **42**

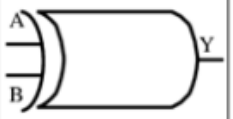








Basic Logic Gates

Logic	Schematic	Boolean Expression	Truth Table	English Expression
AND		$A \bullet B = Y$	A B Y 0 0 0 1 1 0 1 1	The only time the output is positive is when all the inputs are positive.
OR		$A + B = Y$	A B Y 0 0 0 1 1 0 1 1	The output will be positive when any one or all inputs are positive.
XOR		$A \oplus B = Y$	A B Y 0 0 0 1 1 0 1 1	The only time the output is positive is when the inputs are not the same.
NOT		$\bar{A} = Y$	A Y 0 1	The output is the opposite of the input.
NAND		$\overline{A \bullet B} = Y$	A B Y 0 0 0 1 1 0 1 1	The output is positive provided all the inputs are not positive.
NOR		$\overline{A + B} = Y$	A B Y 0 0 0 1 1 0 1 1	The only time the output is positive is when all the inputs are negative.
XNOR		$\overline{A \oplus B} = Y$	A B Y 0 0 0 1 1 0 1 1	The only time the output is positive is when all the inputs are the same.