Converting Base 2 Numbers to Base 10 Numbers

Name: _____

Hour: _____ Date: _____

8 Bits = 1 Byte

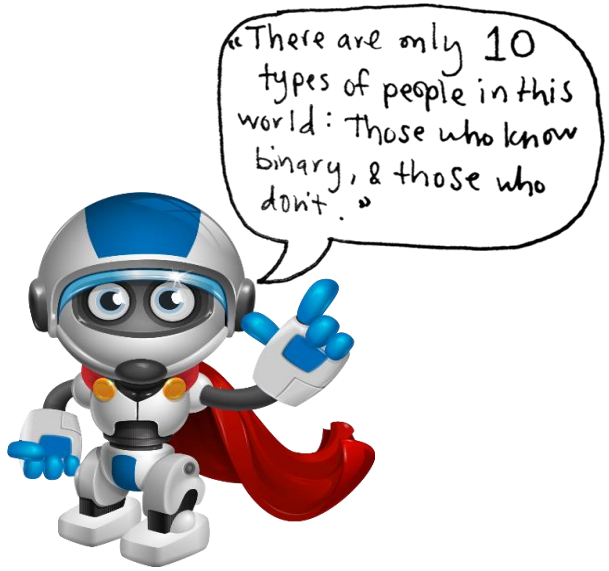
8	7	6	5	4	3	2	1		Value
0	0	0	0	0	0	0	1	=	1
0	0	0	0	0	0	1	0	=	2
0	0	0	0	0	1	0	0	=	4
0	0	0	0	1	0	0	0	=	8
0	0	0	1	0	0	0	0	=	16
0	0	1	0	0	0	0	0	=	32
0	1	0	0	0	0	0	0	=	64
1	0	0	0	0	0	0	0	=	128
1	1	1	1	1	1	1	1	=	255

Look at the binary number (Base 2) in the top row. If a number is a 1, you look at the place setting below it. You then move that place value number to the bottom row. After moving all the numbers down, you add up the number. Whatever the total is, is what number it represents in Base 10 (human).

10101101 is what?

Binary Number	1	0	1	0	1	1	0	1	
Place Value	128	64	32	16	8	4	2	1	
Add numbers together	128 +	0 +	32 +	0 +	8 +	4 +	0 +	1	= 173

An 8 bit computer can only count to 255! After that, they have to use special tricks to actaully count higher.



BINARY

It's as easy as 01,10,11