What range of values can be described by N bits?

N=2 __ __ N=3 __ __ __ N=4 __ __ __ __

Let's talk about addition because it's a common operation and it a good time to present it.

Binary addition very similar to decimal addition

What do you need to know/do for decimal addition

addition table, carry

Binary addition table:

0	+	0	=	0
0	+	1	=	1
1	+	1	=	10
1	+	1	=	11

Addition in 4-bits:

3	0	0	1	1	3	0	0	1	1	1011	
+6	0	1	1	0	+7	0	1	1	1	+7	0111

The number of bits being manipulated by hardware is called word size.

Overflow occurs when the result of an operation lies outside the range of the word size.