Typical Data Sizes

Data Type	Bytes
char	1
short	2
int	4
long	8
float	4
double	8

Encoding Bytes

Hex	Decimal	Binary
0	0	0000
1	1	0001
2	2	0010
3	3	0011
4	4	0100
5	5	0101
6	6	0110
7	7	0111
8	8	1000
9	9	1001
A	10	1010
B	11	1011
C	12	1100
D	13	1101
E	14	1110
F	15	1111

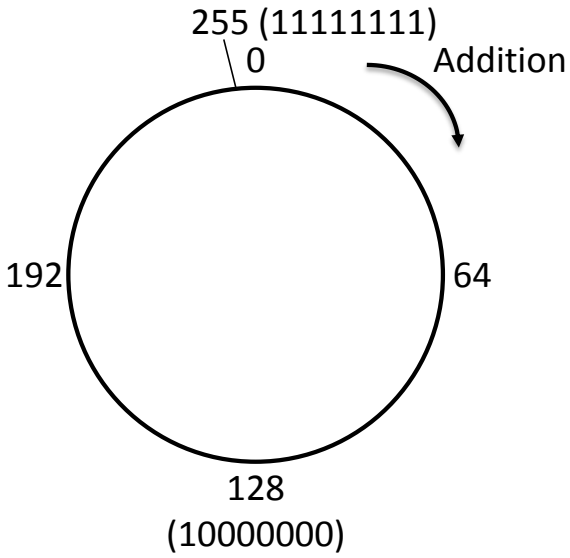
C Puzzle: Logical XOR

- C does not provide a logical XOR operator (which you might reasonably expect to be **^^**). How could you compute the logical XOR of two ints **a** and **b** using existing logical operators?

Binary Arithmetic

```
   1
  0110      6
+ 0100    + 4
------    ---
  1010     10
```

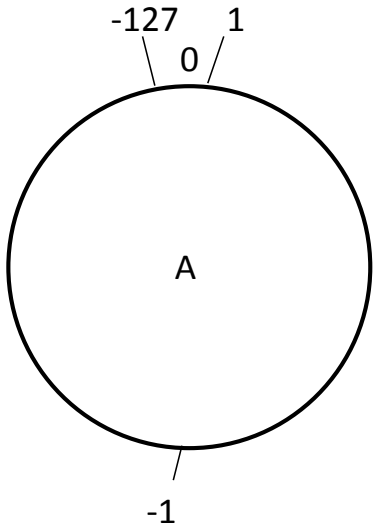
Unsigned Numbers



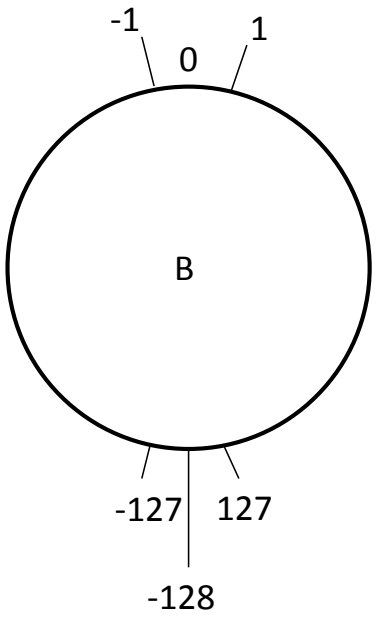
Signed Magnitude

1 = 00000001

-1 = 10000001



Two's Complement

1 = 00000001

-1 = 11111111