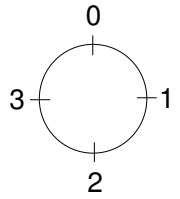
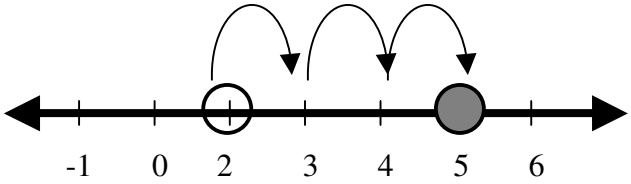
Modular Addition

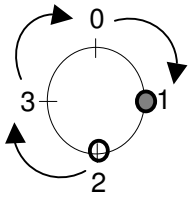
Modular addition is just addition done on a clock instead of on a number line. It is also called clock addition. Let's suppose we have a clock with four numbers on it: 0, 1, 2, 3.



On a number line, to add 2 and 3, we think of starting at 2 and moving 3 units to the right.



Since we end up at 5, we write $2+3=5$. To add 2 and 3 modulo 4, we think of starting at the 2 on the "modulo 4" clock and moving clockwise 3 spaces. Since we end up at 1, we write $2+3=1 \pmod 4$.



Try these problems "mod 4".

1. $3+3=$ _____ 2. $1+3=$ _____ 3. $2+2+2+2=$ _____

Now fill in an addition "mod 4" table.

+ (mod 4)	**0**	**1**	**2**	**3**
0		1		3
1		2		
2		3		
3		0		

Complete an addition "mod 6" table.

+ (mod 6)	**0**	**1**	**2**	**3**	**4**	**5**
0						
1						
2						
3	3	4	5	0	1	2
4						
5						