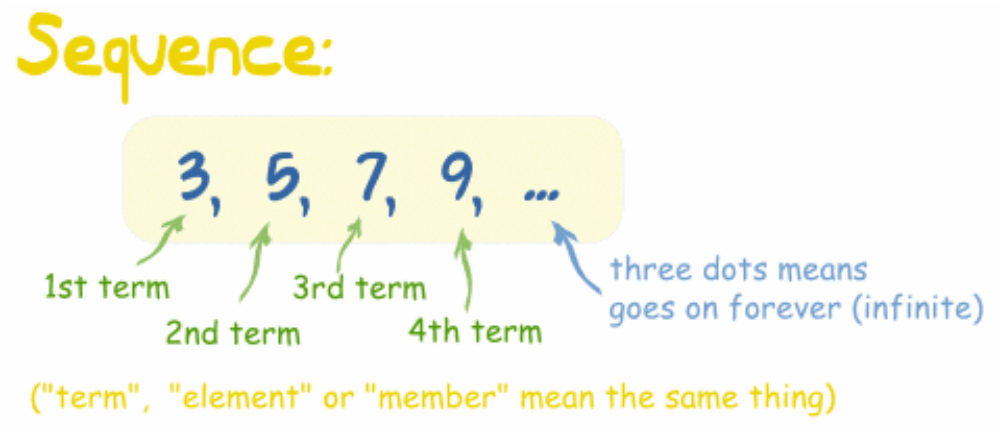
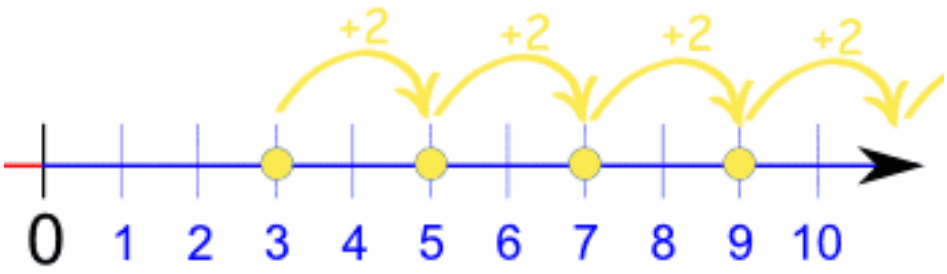
SHQ: What is a Sequence?

A Sequence is a list of things (usually numbers) that are in order.



A Sequence usually has a **Rule**, which is a way to find the value of each term.

For example: the sequence {3, 5, 7, 9, ...} starts at 3 and jumps 2 every time:



Saying "*starts at 3 and jumps 2 every time*" is fine, but it doesn't help us calculate the:

10th term,
100th term, or
nth term, where ***n*** could be any term number we want.

So, we want **a formula** with "n" in it (where n is any term number).

So, what can a rule for {3, 5, 7, 9, ...} Be?

Firstly, the sequence goes up 2 every time, so a rule is something like "2 times n" (where "n" is the term number).

Test it out:

n	term	Test rule
1	3	2
2	5	4
3	7	6

but it is **too low** by 1 every time, What do we suggest?

so try changing it to:

Test Rule: 2n+1

n	term	Test rule
1	3	2+1 = 3
2	5	4+1 = 5
3	7	6 + 1 = 7

That Works!

So instead of saying "starts at 3 and jumps 2 every time"
we write this:

2n+1

Now it's your turn:

Draw a table showing the value of 'n' and 'x' for each term in these sequences, then work out what the formula is for the sequence. Use the example given earlier to help set out your table each time.

1. 2, 4, 6, 8,
2. 0.5, 1, 1.5, 2
3. 6, 9, 12, 15
4. 1.5, 2, 2.5, 3
5. 0, -1, -2, -3

Show how you 'test' your formula each time

For each sequence, work out the 10th term by using your formula

WGD : write a sequence of your own and work out its formula