**POINTS TO REMEMBER**

**Arithmetic Sequence or Progressions**

***AP or AS of the form:***

a, a + d, a + 2d, a + 3d, a + 4d, a + 5d,……….

U1  U2 U3  U4 U5  U6

**The first term, U1 is ‘a’.**

The common difference is ‘**d**’

*d = Un – Un-1 (or) d = Un+1 - Un*

*Un = d + Un-1 (or) Un+1 = d + Un* is called ***Recursive formula****.*

Note: It is very important to tell the 1st term.

**Nth term given by :** *Un = a + ( n-1) d*

**Geometric Sequences or Progressions**

***Gp or GS of the form:***

*a, a r, a r2, a r3, a r4, a r5,……….*

*U1  U2  U3  U4 U5 U6*

**The first term, *U1* is ‘*a*’**

The common ratio (multiplier) is ‘***r***’

 (or) 

*Un= rUn-1 (or) Un+1 = rUn* is called ***Recursive Formula****.*

Note: It is very important to tell the 1st term.

**Nth term given by :** *Un*= *a r(n-1)*

**NOT**E:

Take care, think and list the first few terms to see what is going on.

**Arithmetic Series:**

An arithmetic series has the form:

a + (a + d) + (a + 2d) + (a + 3d) + (a + 4d) + (a + 5d)……….

U1  U2  U3  U4 U5 U6

**Sn for the sum of the ‘n’ terms gives:**



If we know the *last term* value:



Note:Un = Sn **–** Sn–1  🡪 **(**U2 = S2 **–** S1**)**

**Geometric Series**

A geometric series has the form:

*a + a r + a r2 + a r3 + a r4+ a r5+……….*

*U1  U2  U3  U4 U5  U6*

**Sn for the sum of the ‘n’ terms gives:**

 *if ‘r’ is between -1 and 1*

 *if ‘r’ is not between -1 and 1*

Examples of numbers and sequence:

* Even numbers: 2,4,6,8,…..
* Odd numbers: 1,3,5,7,…..
* Number 1 is neither prime nor composite.
* Prime numbers: 2,3,5,7,11,……(divisible by 1 and itself).
* Composite numbers: 4,6,8,9,10,…..( Composite number must have 3 or more factors. It can’t be 0 or 1 or a prime number.)
* Triangular numbers: 1,3,6,10,15,21,…..(number of dots forms triangular shape).
* Square numbers:1,4,9,16,…..(12,22,32,42,…).
* Fibonacci sequence: 1,1,2,3,5,8,13,…(the next term equals the sum of the previous two terms).
* Lucas sequence: 1,3,4,7,11,18,29,……..
* Harmonic sequence 

**Note:**

* In order to increase an amount by 9% , multiply the amount by 1.09.
* In order to decrease an amount by 20%, multiply the amount by 0.8.