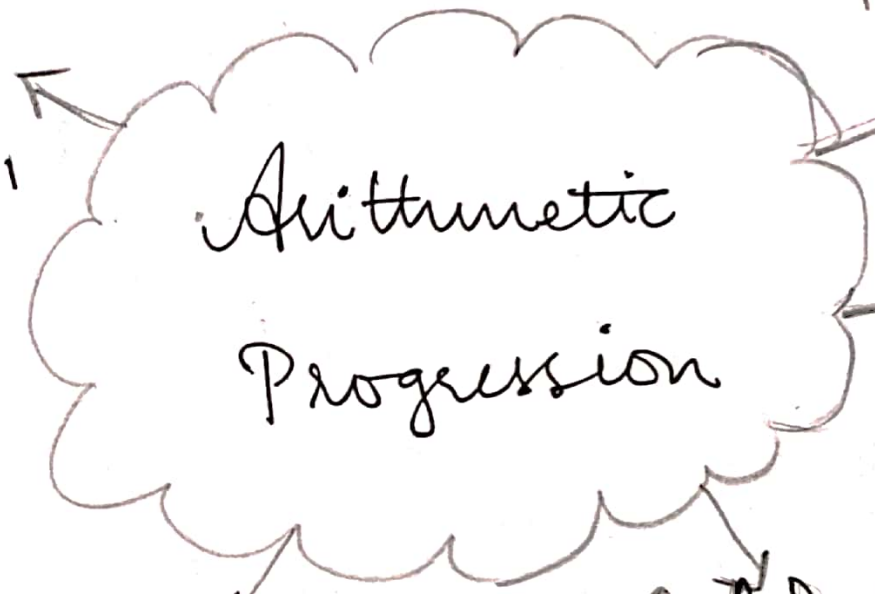
Data Equation and Formulae

General form of an A.P	$a, a+d, a+2d \ldots\ldots$
The 'n' th term of an A.P	$a_n = a+(n-1)d$
Sum of the first 'n' terms	$S_n = \frac{n}{2}(a+a_n)$
Common difference	$d = a_2 - a_1$

Concept Map



1. General form
$a, a+d, a+2d \ldots$

2. Common diff
$d = a_2 - a_1$

3. A.P is a list of numbers in which each term is obtained by adding a fixed number to the preceeding term except the first term

4. a - first term
d - common diff.

5. Example

1, 2, 3, 4 ....

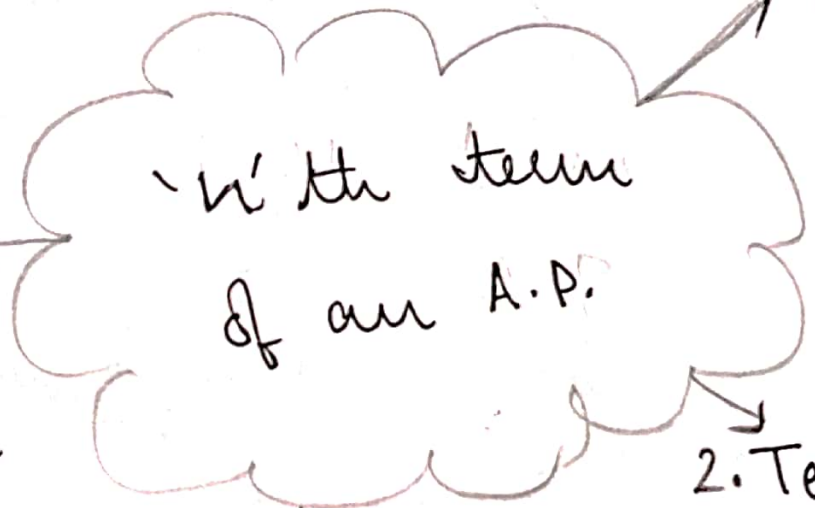
$a = 1 \quad d = 2 - 1 = 1$

$a_4 = a + 3d$

$1 + 3(1)$

$= 4$ //

Concept Map



1. Formula
$a_n = a + (n-1)d$

2. Term is each of the numbers in the list.

3. a - first term
d - common diff.
a_n - in' th term
l - last term

4. Example

Find the 10th term.

2, 4, 6, 8.....

$a = 2$ $\quad d = 4-2 = 2$

$n = 10$

$a_n = a + (n-1)d$

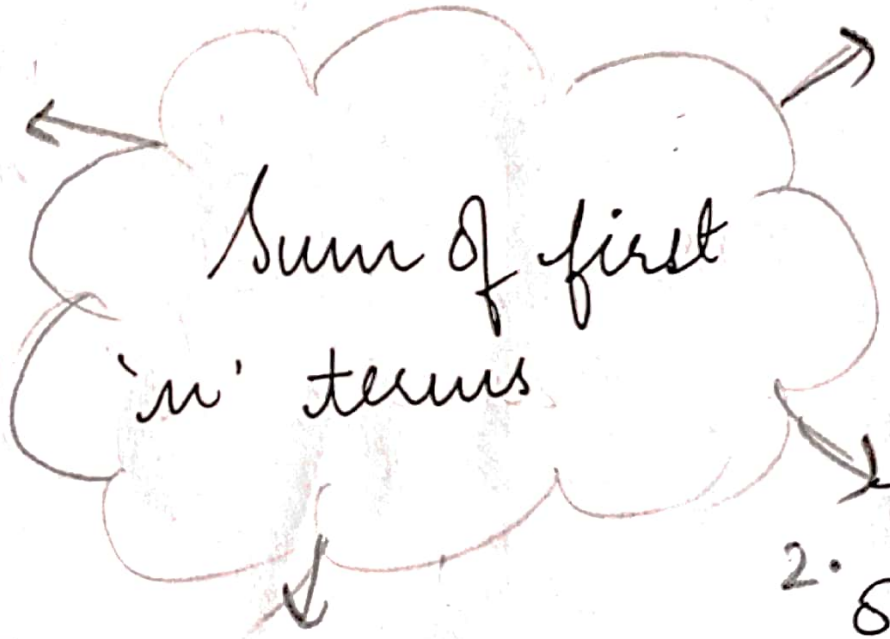
$= 2 + (10-1)2$

$= 2 + (9)2$

$= 2 + 18$

$a_n = 20$ //

Concept Map



1. Formula
$S = \frac{n}{2}(a + a_n)$
also
$\frac{n}{2}(a + l)$

2. The sum of the first 'n' no. of terms

3. a - first term
d - common diff.
a_n - n' th term
n - total terms
l - last term

4. Example
Sum of first n positive integers
$S_n = 1 + 2 + 3 \cdots n$
$a = 1 \qquad l = n$
$S_n = \frac{n}{2}(1 + n)$
$= \frac{n(1+n)}{2}$ //