

# ONLINE MATHS CLASS - X - 11 ( 14 / 07 /2021 )

## 1. ARITHMETIC SEQUENCE - CLASS 9 – WORK SHEET

### Important points .

➤ In an arithmetic sequence , the sums of the pairs of the terms are equal if the sums of their positions are equal .

➤  $1 + 2 + 3 + \dots + n = \frac{n(n+1)}{2}$

➤ For the arithmetic sequence ,  $x_n = an + b$

the sum of first  $n$  terms is  $x_1 + x_2 + x_3 + \dots + x_n = a \frac{n(n+1)}{2} + bn$

1. Compute the following sums .

- a)  $1 + 2 + 3 + \dots + 40$
- b)  $2 + 4 + 6 + \dots + 80$
- c)  $3 + 5 + 7 + \dots + 81$
- d)  $6 + 11 + 16 + \dots + 201$

2. Compute the following sums .

- a)  $1 + 2 + 3 + \dots + 50$
- b)  $6 + 12 + 18 + \dots + 300$
- c)  $1 + 7 + 13 + \dots + 295$
- d)  $7 + 19 + 31 + \dots + 595$

3) Consider the arithmetic sequences  $9, 14, 19, \dots$  and  $7, 12, 17, \dots$

- a) Find the common difference of these sequences .
- b) What is the difference between the first terms of these sequences ?
- c) Calculate the difference between the sums of the first 30 terms of these sequences .

- 4) Consider the arithmetic sequence  $5, 8, 11, \dots$
- a) What is the common difference of the sequence ?
  - b) What is the difference between the 21<sup>st</sup> and first terms of this sequence ?
  - c) What is the difference between the 40<sup>th</sup> and 20<sup>th</sup> terms of this sequence ?
  - d) What is the difference between the sum of the first 20 terms and the next 20 terms of this sequence ?
5. Common difference of an arithmetic sequence is 8 and the sum of the first 20 terms is 636 .
- a) What is the sum of the first and 12<sup>th</sup> terms of this sequence ?
  - b) What is the common difference of this sequence ?
  - c) Write down the sequence .