# SET 1

1(a).What is the remainder on dividing the terms of the arithmetic sequence100,107,114,..... by 7 ?
(b)Write the sequence of all three digit numbers which leaves remainder 3 on division by 7 ? Which is the last term of the sequence ? SSLC 2019

2.The algebraic expression of an arithmetic sequence is 5n+3
(a) Write the first term.
(b)Write the remainder obtained by dividing the terms of the sequence by 5 ? SSLC 2018

3. Consider the numbers from 100 to 300 which leaves remainder 2 on division by 3
(a) Write the first term.
(b) Write the last term
(c) Find the number of terms.
(d) Find the sum of all terms of the sequence SSLC 2018

Answers

1. (a)Remainder = 2

(b) 101,108,115,.....

Last term= 997

2 (a) First term =8

(b) Remainder =3

3.(a)First term=101

(b)Last term=299

(c)Number of terms=(299-101)/3 + 1
=198/3 +1
=66+1=67

(d) Sum=67/2 x[101+299]
=67/2 x 400=13400

## SET 2

1.(a )What is the tenth term of the arithmetic sequence a+1, .a+2, .a+3,……?

(b) What is the common difference?

(c) Write the algebraic form of the above sequence. SSLC 2021

2.(a )What is the sum of the first 5 terms of the arithmetic sequence1,3,5,7,.....?

(b)What is the sum of the first n terms of the arithmetic sequence1,3,5,7,.....?

(c)What is the sum of the first n terms of the arithmetic sequence 1/n, 3/n, 5/n, 7/n.....?

(d) What is the sum of the first 2020 terms of the arithmetic sequence
1/2020, 3/2020 ,5/2020,.....? SSLC 2020

3.(a) Write the 6th term of the arithmetic sequence 1,25,49,73,97,.....

(b) How many perfect square terms are there in the arithmetic sequence

97,73,49,.....? SSLC 2020

4.(a) Write the first term and common difference of the arithmetic sequence whose algebraic expresson is 3n+5.

(b) First term of an arithmetic sequence is 8 and common difference is 5. Write the algebraic form. SSLC 2020

Answer

1. i) a+10
   ii) 1
   iii) a+n
2.
   i) $5^2$
   ii) $n^2$
   iii) n
   iv) 2020
3.
   i) 121
   ii) 3
4.
(a) common difference= 3
    first term= 8
(b) 5n+3

## SET 3

1.If the terms of the arithmetic sequence 2/9,3/9,4/9,5/9,……are represented as $x_1$, $x_2$, $x_3$,……..then

(a) $x_1+x_2+x_3=$
(b) $x_4+x_5+x_6=$
(c) Find the sum of first 9 terms.
(d) What is the sum of first 300 terms.?

2. Find the following sums

(a)1+2+3+……..+100
(b)1+3+5+……..+99
(c)2+4+6+……..+100
(d)3+7+11+…….+199 [SSLC 2019]

3. Fill up the empty cells of the given square such that the numbers in each row, each column and both diagonals form arithmetic sequences.

| | | |
|---|---|---|
| 3 | | 13 |
| | | |
| 7 | | |

[SSLC 2021]

## Answers

1.

a) 1

b) $\frac{5}{9} + \frac{6}{9} + \frac{7}{9} = 2$

c) $\frac{9}{2}[\frac{2}{9} + \frac{10}{9}]$

$\frac{9}{2} \times \frac{12}{9} = 6$

d) $\frac{300}{2}[\frac{2}{9} + \frac{301}{9}]$

$\frac{300}{2} \times \frac{303}{9}$

$150 \times \frac{101}{3} = 5050$

2.

a) $\frac{100 \times 101}{2} = 5050$

b) $50^2 = 2500$

c) $\frac{50}{2}[2+100] = \frac{50}{2} \times 102$

$50 \times 51 = 2550$

d) $\frac{199-3}{4} + 1$

$\frac{196}{4} + 1$

$49 + 1 = 50$

തുക $= \frac{50}{2}[3+199]$

$= 25 \times 202 = 5050$

3.

| | | |
|---|---|---|
| 3 | 8 | 13 |
| 5 | 10 | 15 |
| 7 | 12 | 17 |

## SET 4

1.Write the first term and common difference of the arithmetic sequence 3n+2 SSLC 2021

2.Sum of the first 4 term of an arithmetic sequence is 72..Sum of the first 9 terms is also 72

(a) What is the $5^{th}$ term of the arithmetic sequence ?

(b)Find the sum of the first five terms.

(c) Write the sequence. SSLC 2020

3.

1
2 3
4 5 6
7 8 9 10
……..
(a) Write the fifth line of the pattern.
(b) How many numbers are there in the tenth line?
(c) How many numbers are there in thefirst ten lines altogether?
(d) What is the first number in the $11^{th}$ line? SSLC 2021

4.(a) What is the remainder on dividing the terms of the arithmetic sequence 100,109,118,..... by 9 ?
(b) Write the sequence of 3 digit numbers ,which are multiples of 9.
(c) What is the position of 999 in the arithmetic sequence of 3 digit numbers which are multiples of 9 ?

## Answers

1. first term 5 common difference 3

2.(a) $X_5 = 72/9 = 8$
(b) $S_5 = 72 + 8 = 80$
(c)$X_3 = 80/5 = 16$
$X_3 + 2d = X_5$
$16 + 2d = 8$
$2d = -8$
$d = -4$
$X_1 = X_3 - 2d = 16 - 2 \times -4 = 16+8=24$
ie sequence ==> 24, 20, 16,.....

3.
(a) 11 12 13 14 15
(b) 10
(c)55
(d) 56

4.
(a) 1
(b) 108, 117, 126,.....
(c)$X_n=dn+X_1-d$
999=9n+108-9
999=9n+99
9n=999-99=900
n=900/9=100

# SET 5

1.There are 20 terms in an arithmetic sequence.Sum of the first and last terms is 88.

(a) What is the sum of $2^{nd}$ and $19^{th}$ terms ?

(b) If the $10^{th}$ term is 42, what is the $11^{th}$ term ?

(c)What is the common difference of the sequence ?

(d)What is the first term ? SSLC 2018

2. Sum of n terms of an arithmetic sequence is $3n^2+2n$. Write the common difference and algebraic form of the sequence.

[SSLC 2016]

3(a)Write the first integer term of the arithmetic sequence 1/7,2/7,3/7,……

(b) What is the sum of first 7 terms of this sequence.

SSLC 2019

4.(a) Write the first three terms of the sequence of natural numbers which leaves remainder 1 when divided by 5.

(b) Check whether 510 is a term of this sequence.

[SSLC 2017]

5. Consider the arithmetic sequence 5,9,13,……

(a) Write the next term of this sequence.

(b) Is 510 a term of this sequence ? Why ? [SSLC 2012] .

Answers

1.
(i) 88
(ii) 46
(iii) 4
(iv) 6

2.Sum of the terms $3n^2+2n$.
common difference = 6
algebraic form = $6n-1$

3.(a) 1
(b) 4

3.(a) 1
(b) 4

4.(a) 1,6,11

(b) 510–1=509, not a multiple of the common difference 5
So 510 is not a term of this sequence.

5.(a) 17

(b) 2012 – 5 =2007 , not a multiple of the common difference 4
So 2012 is not a term of this sequence.

# SET 6

1. The algebraic form of an arithmetic sequence is 3 - 5n
(a) Write the common difference and first term
(b) Write the $10^{th}$ term.

2.Consider the arithmetic sequence 9,15,21,……
(a) Write the algebraic form of the sequence
(b) Write the $25^{th}$ term.

3.The first term of an arithmetic sequence is 10 and common difference is 3.Write the first three terms . Check whether 100 is a term of the sequence.

4.

The $8^{th}$ term of an arithmetic sequence is 43 and $16^{th}$ term is 83.

a) What is the common differences?

b) First term = _____

c) $20^{th}$ term = _____

5.

Consider the sequence of numbers between 300 and 500, leave remainder 2 on division by 5. Find

a) Common differences of this sequence.

b) What is the first term of the sequence?

c) What is the last term of the sequence?

d) Write the algebraic expression of this sequence.

e) Find the number of terms in this sequence.

1.(a) common difference= - 5
first term= - 2

(b) $10^{th}$ term.=3-5x10= 3 - 50= - 47

2.(a) 9,15,21,……

$x_1 = 9$ , $d = 15 - 9 = 6$

algebraic form $X_n = dn + x_1 - d$

$= 6n + 9 - 6$

$= 6n + 3$

(b) $n = 25 \rightarrow 6n + 3 = 6 \times 25 + 3 = 150 + 3 = 153$

$25^{th}$ term.=153

3. first term = 10 , common difference = 3.
first three terms 10,13,16

When we divide the terms of the sequence by common difference 3, we get remainder 1

When we divide100 by common difference 3, we get remainder 1

So 100 is a term of the sequence.

4.

a) $16^{th}$ term - $8^{th}$ term = 83–43

$8\,d = 40$

Common difference $d = 5$

b) First term f = $8^{th}$ term - 7 times Common difference

$= 43 - 35 = 8$

c) $20^{th}$ term $= 16^{th}$ term $+ 4\,d$

$= 83 + 4 \times 5$

$= 103$

5.(a) common difference= 5

(b) First term =302

(c) Last term =497

(d) algebraic form $X_n=dn+x_1-d$
$=5n+302-5$
$=5n+297$

(e) No. of terms =(497-302) / 3 + 1=195/3 + 1=39+1=40