

Session 3

- 1) Write the sequence of numbers starting from 7 and adding 3 repeatedly
7, 10, 13, 16, 19...

Answers

We can write sequences starting from a number and adding the same number or another number repeatedly. Such sequences are known as Arithmetic Sequences. The numbers used in the sequence are generally called terms of the sequence. 7 is the first term of the sequence. The number which is added repeatedly is called common difference. The first term is denoted by f or x_1 . The common difference is denoted by d .

$x_1, x_2, x_3 \dots$ are the terms of the sequence. x_n is the general term or n th term of the sequence.

- 2) Write the sequence of numbers obtained by multiplying each of 1, 2, 3, 4... by 3 and adding 2. Describe this sequence in other words.

Answer

★ $1 \times 3 + 2, 2 \times 3 + 2, 3 \times 3 + 2 \dots$

That is, 5, 8, 11...

- ★ This is the sequence starting from 5 and adding 3 repeatedly. This is the arithmetic sequence having first term 5 and common difference 3

- 3) 10, \square , 18, \square , 26... is an arithmetic sequence. What is its common difference? Write the missing terms in the boxes.

Answer

★ $18 - 10 = 2d, 2d = 8, d = 4$

★ Second term $10 + 4 = 14$, Fourth term $= 18 + 4 = 22$.

- 4) The numbers in horizontal, vertical and diagonal squares are in arithmetic sequence. Write the missing terms
(SSLC 2021 April)

3		13
7		

Answer

★ Look at the picture.

3	a	13
b	c	d
7	e	f

★ 3, a, 13 are in arithmetic sequence .Let D be the common difference
 $2D = 13 - 3 = 10, D = 5, a = 3 + 5 = 8$

7, c, 13 are in arithmetic sequence . $2D = 13 - 7 = 6, D = 3, c = 7 + 3 = 10$

3, b, 7 are in arithmetic sequence . $2D = 7 - 3 = 4, D = 2, b = 3 + 2 = 5$

b, c, d are in arithmetic sequence . $D = 10 - 5 = 5, d = 10 + 5 = 15$

13, d, f are in arithmetic sequence . $D = 15 - 13 = 2, f = 15 + 2 = 17$

7, e, f are in arithmetic sequence . $2D = 17 - 7 = 10, D = 5, e = 12$

worksheet 5

- 1) Consider the arithmetic sequence 3, 8, 13, 18, ...
 - a) What is the common difference ?
 - b) Describe this sequence in other words.
- 2) Multiply the terms of 1, 2, 3, 4, ... by 2 and add 3 .
 - a) Write the sequence
 - b) What is the common difference
 - c) What is the tenth term of this sequence ?
 - d) Describe this sequence in other words
- 3) $a + 1, a + 2, a + 3, \dots$ are in an arithmetic sequence .
 - a) Write the next two terms

b) What is the common difference ?

3

c) What is the tenth term?

d) Write the n th term of this sequence

4) The numbers in horizontal, vertical and diagonal squares are in arithmetic sequence. Write the missing terms

4		8
10		

5) Consider the arithmetic sequence $2, 5, 8 \dots$. The terms are 1 less than the multiples of 3

a) What is the common difference ?

b) Write this sequence in other words

c) What is the tenth term of this sequence ?

d) What is the n th term of this sequence ?

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