



n^{th} term of Linear Sequences

←
REVISE THIS TOPIC

1 The first four terms of an arithmetic sequence are

3 6 9 12 ...

Write down an expression, in terms of n , for the n^{th} term of the sequence.

$3n$

(Total for Question 1 is 2 marks)

2 The first four terms of an arithmetic sequence are

+4 \square 2 4 6 8
6 8 10 12 ...
+2 +2 +2

Write down an expression, in terms of n , for the n^{th} term of the sequence.

$2n + 4$

(Total for Question 2 is 2 marks)

3 The first four terms of an arithmetic sequence are

-1 \square 3 6 9 12
2 5 8 11 ...
+3 +3 +3

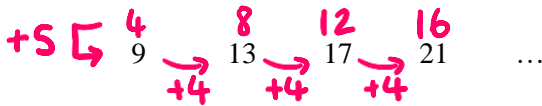
Write down an expression, in terms of n , for the n^{th} term of the sequence.

$3n - 1$

(Total for Question 3 is 2 marks)



4 The first four terms of an arithmetic sequence are

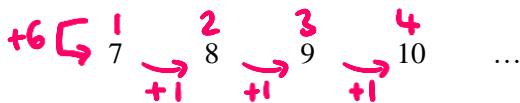


Write down an expression, in terms of n , for the n th term of the sequence.

$$4n + 5$$

(Total for Question 4 is 2 marks)

5 The first four terms of an arithmetic sequence are

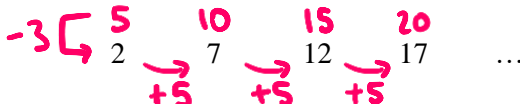


Write down an expression, in terms of n , for the n th term of the sequence.

$$n + 6$$

(Total for Question 5 is 2 marks)

6 The first four terms of an arithmetic sequence are



Write down an expression, in terms of n , for the n th term of the sequence.

$$5n - 3$$

(Total for Question 6 is 2 marks)



7 The first four terms of an arithmetic sequence are

$$\begin{array}{ccccccc}
 +44 & \hookrightarrow & 6 & & 12 & & 18 & & 24 & & \dots \\
 & & 50 & \rightarrow & 56 & \rightarrow & 62 & \rightarrow & 68 & & \\
 & & & & +6 & & +6 & & +6 & &
 \end{array}$$

Write down an expression, in terms of n , for the n th term of the sequence.

$$6n + 44$$

(Total for Question 7 is 2 marks)

8 The first four terms of an arithmetic sequence are

$$\begin{array}{ccccccc}
 -13 & \hookrightarrow & 10 & & 20 & & 30 & & 40 & & \dots \\
 & & -3 & \rightarrow & 7 & \rightarrow & 17 & \rightarrow & 27 & & \\
 & & & & +10 & & +10 & & +10 & &
 \end{array}$$

Write down an expression, in terms of n , for the n th term of the sequence.

$$10n - 13$$

(Total for Question 8 is 2 marks)

9 The first four terms of an arithmetic sequence are

$$\begin{array}{ccccccc}
 +3.5 & \hookrightarrow & 0.5 & & 1 & & 1.5 & & 2 & & \dots \\
 & & 4 & \rightarrow & 4.5 & \rightarrow & 5 & \rightarrow & 5.5 & & \\
 & & & & +0.5 & & +0.5 & & +0.5 & &
 \end{array}$$

Write down an expression, in terms of n , for the n th term of the sequence.

$$0.5n + 3.5$$

(Total for Question 9 is 2 marks)



10 The first four terms of an arithmetic sequence are

$$+11 \quad \begin{array}{c} \boxed{} \\ \rightarrow \end{array} \quad \begin{array}{c} -2 \\ 9 \end{array} \quad \begin{array}{c} \rightarrow \\ -2 \end{array} \quad \begin{array}{c} -4 \\ 7 \end{array} \quad \begin{array}{c} \rightarrow \\ -2 \end{array} \quad \begin{array}{c} -6 \\ 5 \end{array} \quad \begin{array}{c} \rightarrow \\ -2 \end{array} \quad \begin{array}{c} -8 \\ 3 \end{array} \quad \dots$$

Write down an expression, in terms of n , for the n th term of the sequence.

$$\underline{\underline{-2n + 11}}$$

(Total for Question 10 is 2 marks)

11 The first four terms of an arithmetic sequence are

$$+19 \quad \begin{array}{c} \boxed{} \\ \rightarrow \end{array} \quad \begin{array}{c} -4 \\ 15 \end{array} \quad \begin{array}{c} \rightarrow \\ -4 \end{array} \quad \begin{array}{c} -8 \\ 11 \end{array} \quad \begin{array}{c} \rightarrow \\ -4 \end{array} \quad \begin{array}{c} -12 \\ 7 \end{array} \quad \begin{array}{c} \rightarrow \\ -4 \end{array} \quad \begin{array}{c} -16 \\ 3 \end{array} \quad \dots$$

Write down an expression, in terms of n , for the n th term of the sequence.

$$\underline{\underline{-4n + 19}}$$

(Total for Question 11 is 2 marks)

12 The first four terms of an arithmetic sequence are

$$+14 \quad \begin{array}{c} \boxed{} \\ \rightarrow \end{array} \quad \begin{array}{c} -5 \\ 9 \end{array} \quad \begin{array}{c} \rightarrow \\ -5 \end{array} \quad \begin{array}{c} -10 \\ 4 \end{array} \quad \begin{array}{c} \rightarrow \\ -5 \end{array} \quad \begin{array}{c} -15 \\ -1 \end{array} \quad \begin{array}{c} \rightarrow \\ -5 \end{array} \quad \begin{array}{c} -20 \\ -6 \end{array} \quad \dots$$

Write down an expression, in terms of n , for the n th term of the sequence.

$$\underline{\underline{-5n + 14}}$$

(Total for Question 12 is 2 marks)



13 The first four terms of an arithmetic sequence are

$$\begin{array}{cccccc}
 +10 & \boxed{\rightarrow} & -9 & -18 & -27 & -36 & \dots \\
 & & 1 & -8 & -17 & -26 & \\
 & & & \rightarrow & \rightarrow & \rightarrow & \\
 & & & -9 & -9 & -9 &
 \end{array}$$

Write down an expression, in terms of n , for the n th term of the sequence.

$$-9n + 10$$

(Total for Question 13 is 2 marks)

14 The first four terms of an arithmetic sequence are

$$\begin{array}{cccccc}
 +111 & \boxed{\rightarrow} & -11 & -22 & -33 & -44 & \dots \\
 & & 100 & 89 & 78 & 67 & \\
 & & & \rightarrow & \rightarrow & \rightarrow & \\
 & & & -11 & -11 & -11 &
 \end{array}$$

Write down an expression, in terms of n , for the n th term of the sequence.

$$-11n + 111$$

(Total for Question 14 is 2 marks)

15 The first four terms of an arithmetic sequence are

$$\begin{array}{cccccc}
 +6.2 & \boxed{\rightarrow} & -0.2 & -0.4 & -0.6 & -0.8 & \dots \\
 & & 6 & 5.8 & 5.6 & 5.4 & \\
 & & & \rightarrow & \rightarrow & \rightarrow & \\
 & & & -0.2 & -0.2 & -0.2 &
 \end{array}$$

Write down an expression, in terms of n , for the n th term of the sequence.

$$-0.2n + 6.2$$

(Total for Question 15 is 2 marks)



16 The first five terms of an arithmetic sequence are

$$\begin{array}{cccccc}
 +1 & \boxed{\rightarrow} & 5 & 10 & 15 & 20 & 25 & \dots \\
 & & 6 & \rightarrow & 11 & \rightarrow & 16 & \rightarrow & 21 & \rightarrow & 26 & \dots \\
 & & & +5 & & +5 & & +5 & & +5 & & \dots
 \end{array}$$

Work out the 20th term of the sequence.

$$\begin{aligned}
 &5n + 1 \\
 &5 \times 20 + 1 \\
 &= 100 + 1
 \end{aligned}$$

101

(Total for Question 16 is 3 marks)

17 The first five terms of an arithmetic sequence are

$$\begin{array}{cccccc}
 -5 & \boxed{\rightarrow} & 6 & 12 & 18 & 24 & 30 & \dots \\
 & & 1 & \rightarrow & 7 & \rightarrow & 13 & \rightarrow & 19 & \rightarrow & 25 & \dots \\
 & & & +6 & & +6 & & +6 & & +6 & & \dots
 \end{array}$$

Work out the 50th term of the sequence.

$$\begin{aligned}
 &6n - 5 \\
 &6 \times 50 - 5 \\
 &= 300 - 5
 \end{aligned}$$

295

(Total for Question 17 is 3 marks)

18 The first five terms of an arithmetic sequence are

$$\begin{array}{cccccc}
 -2 & \boxed{\rightarrow} & 4 & 8 & 12 & 16 & 20 & \dots \\
 & & 2 & \rightarrow & 6 & \rightarrow & 10 & \rightarrow & 14 & \rightarrow & 18 & \dots \\
 & & & +4 & & +4 & & +4 & & +4 & & \dots
 \end{array}$$

Work out the 100th term of the sequence.

$$\begin{aligned}
 &4n - 2 \\
 &4 \times 100 - 2 \\
 &= 400 - 2
 \end{aligned}$$

398

(Total for Question 18 is 3 marks)



19 The first five terms of an arithmetic sequence are

4 7 10 13 16 ...

Is the number 91 in the sequence?

You must show how you get your answer.

$$3n + 1 = 91$$

$$3n = 90$$

$$n = 30$$

Yes, it is the 30th term

(Total for Question 19 is 3 marks)

20 The first five terms of an arithmetic sequence are

3 7 11 15 19 ...

Is the number 201 in the sequence?

You must show how you get your answer.

$$4n - 1 = 201$$

$$4n = 202$$

$$n = 50.5$$

50.5 is not an integer

It is not in the sequence

(Total for Question 20 is 3 marks)



21 The first five terms of an arithmetic sequence are

7 13 19 25 31 ...

Is the number 124 in the sequence?

You must show how you get your answer.

$$6n + 1 = 124$$

$$6n = 123$$

$$n = 20.5$$

50.5 is not an integer

It is not in the sequence

(Total for Question 21 is 3 marks)

22 The first five terms of an arithmetic sequence are

50 47 44 41 38 ...

Is the number -10 in the sequence?

You must show how you get your answer.

$$-3n + 53 = -10$$

$$-3n = -63$$

$$n = 21$$

It is the 21st term

(Total for Question 22 is 3 marks)

