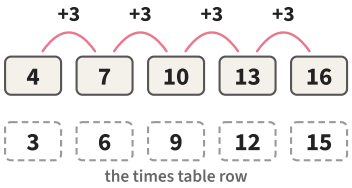
The nth Term of a Linear Sequence

ANSWERS

1

Find the nth term of

4, 7, 10, 13, 16, …



Difference up by 3, so 3n

Adjust 1 more: add 1

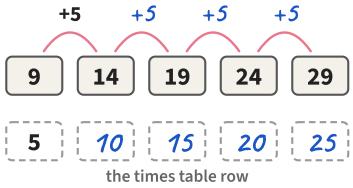
Check n = 3: 9 + 1 = 10 ✓

nth term 3n + 1

2

Find the nth term of

9, 14, 19, 24, 29, …



Difference up by 5, so 5n

Adjust 4 more: add 4

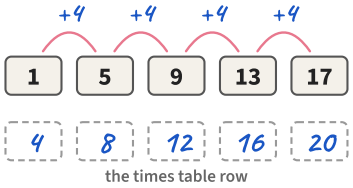
Check n = 3: 15 + 4 = 19 ✓

nth term 5n + 4

3

Find the nth term of

1, 5, 9, 13, 17, …



Difference up by 4, so 4n

Adjust 3 less: take away 3

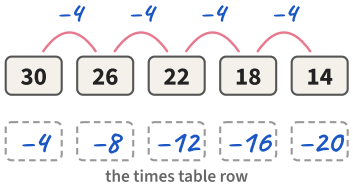
Check n = 3: 12 − 3 = 9 ✓

nth term 4n − 3

4

Find the nth term of

30, 26, 22, 18, 14, …



Difference down by 4, so −4n

Adjust 34 more: add 34

Check n = 3: −12 + 34 = 22 ✓

nth term 34 − 4n

5

Find the nth term of 8, 11, 14, 17, …

Then use it to find the 50th term.

nth term is 3n + 5

3 × 50 + 5

50th term 155

6

Is 150 in the sequence

5, 12, 19, 26, … Show how you know.

nth term is 7n − 2

7n = 152, 152 ÷ 7 is not whole

Answer No

7

Which term of the sequence

11, 20, 29, 38, … is equal to 200?

nth term is 9n + 2

9n + 2 = 200, 9n = 198

Answer the 22nd term

8

Mo says the nth term of

3, 10, 17, 24, … is n + 7.

Explain what Mo has done wrong.

Then find the right nth term.

n + 7 gives 8 when n = 1, not 3

up by 7 means 7n, then take away 4

nth term 7n − 4

The nth Term of a Linear Sequence *further practice*

ANSWERS

9

Find the nth term of the sequence

12, 21, 30, 39, 48, …

up by 9, so 9n, then add 3

nth term *9n + 3*

10

Find the nth term of the sequence

7, 3, −1, −5, −9, …

down by 4, so −4n, then add 11

nth term *11 − 4n*

11

Rosa saves the same amount every week. She has £45 at the end of week 1, £52 at the end of week 2 and £59 at the end of week 3.
Write an expression for the amount she has at the end of week n.
How much will she have at the end of week 20?

up by £7 a week: 7n + 38

Week n, in £ *7n + 38*

Week 20 *£178*

12

Find the 100th term of the sequence

250, 247, 244, 241, …

nth term is 253 − 3n

253 − 300

100th term *−47*

13

Which term of the sequence

5, 13, 21, 29, … is equal to 205?

nth term is 8n − 3

8n = 208, so n = 26

Answer *the 26th term*

14

The nth term of a sequence is $6n + 5$.
Ring the numbers that are in the sequence.

41	56	**77**
100	**125**	150

take away 5: is it in the 6 times table?

Answer *41, 77, 125*

15

Find the first term of the sequence

8, 15, 22, 29, … that is greater than 200.

nth term is 7n + 1

the 28th term is 197, the 29th is 204

Answer *204*

16

Sam says the nth term of the sequence

40, 35, 30, 25, … is $5n + 35$.

Is Sam right? Explain how you know.

5n + 35 goes 40, 45, 50, …

it goes down by 5: 45 − 5n

Answer *No, it is 45 − 5n*