

nth Term of Linear Sequences

For AQA GCSE Mathematics (8300) • Foundation tier

Name _____

Total marks: **28**

Answer **all** questions in the spaces provided. Show your working: marks are given for correct method.

1 The n th term of a sequence is $5n - 2$

(a) Work out the 1st term.

[1 mark]

Answer _____

(b) Work out the 10th term.

[1 mark]

Answer _____

(c) Is 100 a term in the sequence? Tick a box.
Give a reason for your answer.

[1 mark]

☐ Yes ☐ No

- 2 A linear sequence starts 8 14 20 26 ...
Work out an expression for the n th term of the sequence.

[2 marks]

Answer _____

- 3 A linear sequence starts 9 13 17 21 ...
Work out an expression for the n th term of the sequence.

[2 marks]

Answer _____

- 4 A linear sequence starts 20 16 12 8 ...
Work out an expression for the n th term of the sequence.

[2 marks]

Answer _____

- 5 Circle the expression for the n th term of the sequence 2 7 12 17 ...

[1 mark]

$n + 5$

$5n + 2$

$5n - 3$

$2n + 5$

- 6 Here is part of a linear sequence. The 1st and 2nd terms are missing.

____ ____ 19 26 33 ...

Work out the 40th term of the sequence.

[3 marks]

Answer _____

- 7 Sequence A has n th term $5n + 2$

Sequence B starts 4 7 10 13 16 ...

Work out the smallest number greater than 100 that is in both sequences.

[3 marks]

Answer _____

8 Patterns are made from sticks.

Pattern number 1 uses 4 sticks, pattern number 2 uses 7 sticks and pattern number 3 uses 10 sticks.

(a) Write down an expression for the number of sticks in pattern number n .

[2 marks]

Answer _____

(b) Can a pattern be made with exactly 150 sticks? Tick a box.
Give a reason for your answer.

[1 mark]

☐

Yes

☐

No

9 Ellie is finding the n th term of 3 9 15 21
She writes $3n + 6$

What mistake has Ellie made?

[1 mark]

10 The n th term of a sequence is $7n + 3$

Work out the first term of the sequence that is greater than 200

[2 marks]

Answer _____

11 The n th term of a sequence is $40 - 3n$

How many terms of the sequence are positive?

[2 marks]

Answer _____

12 A linear sequence has

- 1st term = 7
- 1st term + 2nd term = 25

(a) Work out an expression for the n th term of the sequence.

[3 marks]

Answer _____

(b) Which term of the sequence is equal to 150?

[1 mark]

Answer _____