

The Nth Term of a Quadratic Sequence

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NAME _____

DATE _____

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- 1 Here are the first four terms of a quadratic sequence.

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1, 18, 45, 82

- (a) Work out the next two terms of the sequence.
(b) State the second difference of the sequence.

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- 2 The n th term of a quadratic sequence is

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$$3n^2 + 7n - 9$$

Write down the first three terms of the sequence.

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- 3 Five terms of a quadratic sequence are shown below. One of them is missing.

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19, 37, ?, 103, 151

Work out the missing term.

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- 4 Here are the first five terms of each of three sequences.

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A 3, 18, 41, 72, 111

B 3, 9, 27, 81, 243

C 6, 8, 10, 12, 14

Exactly one of them is a quadratic sequence.

Write down the letter of the quadratic sequence, and explain how you can tell.

- 5 The n th term of a quadratic sequence is

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$$n^2 + n + 3$$

One term of the sequence is equal to 75.

Find the position of that term in the sequence.

- 6 The n th term of a quadratic sequence is

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$$n^2 - n - 7$$

Work out the first term of the sequence that is greater than 52.

- 7 A quadratic sequence begins

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8, 19, 36, 59, ...

Is 391 a term of this sequence?

You must explain your answer.

- 8 Here are the first four terms of a quadratic sequence.

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12, 26, 44, 66

(a) Work out the next two terms of the sequence.

(b) State the second difference of the sequence.

- 9 The n th term of a quadratic sequence is

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$$n^2 + 2n + 15$$

Write down the first three terms of the sequence.

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- 10 Here are five terms of a quadratic sequence. The third term is missing.

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$-2, 10, ?, 52, 82$

Work out the missing term.

1	(a) 129 and 186 (b) 10	2	1, 17, 39
3	65	4	A. Its second differences are all 8 — equal to each other and not zero, which is what makes a sequence quadratic.
5	$n = 8$	6	65
7	No — the 11th term is 388 and the 12th term is 459, so 391 is not a term of the sequence.	8	(a) 92 and 122 (b) 4
9	18, 23, 30	10	28