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Sequences (Nth Term)

Grade 4 topic · Foundation and Higher · Edexcel and AQA

How to use this pack
20 questions that get harder as you go. Foundation students: aim for Questions 1–15 (44 marks) and have a go at the rest. Higher students: complete all 20. Show your working on the lines and write your final answer on the answer line, then mark yourself with the answers at the back. Diagrams are not drawn accurately. Total: 67 marks.

Warm-up

1 Write down the next two terms of the sequence 7, 9, 11, 13. **[1 mark]**

Answer _____

2 Find an expression for the nth term of 15, 23, 31, 39. **[2 marks]**

Answer _____

3 The nth term of a sequence is 4n + 9. Work out the 7th term. **[2 marks]**

Answer _____

4 Find an expression for the nth term of 5, 8, 11, 14. **[2 marks]**

Answer _____

5 Write down the first three terms of the sequence with nth term $5n - 1$. **[2 marks]**

Answer _____

Core

6 Find the nth term of the sequence 21, 19, 17, 15. **[3 marks]**

Answer _____

7 The nth term of a sequence is $2n + 5$. Is 65 a term of the sequence? Give a reason. **[3 marks]**

Answer _____

8 The nth term of a sequence is 6n + 1. Is 206 a term of the sequence? Give a reason. **[3 marks]**

Answer _____

9 A sequence starts 6, 8, 10, 12. Work out the 24th term. **[3 marks]**

Answer _____

10 Work out the 20th term of the sequence 52, 50, 48, 46. **[3 marks]**

Answer _____

Stretch

11 The 2th term of an arithmetic sequence is 12 and the 9th term is 54. Find the nth term. **[4 marks]**

Answer _____

12 Find which term of the sequence 5n + 3 is equal to 48. **[4 marks]**

Answer _____

13 The nth term of a sequence is 3n + 3. Find the first term that is greater than 100. **[4 marks]**

Answer _____

14 Pattern n in a tile design uses 3n + 2 tiles. How many tiles are in pattern 13? **[4 marks]**

Answer _____

15 Pattern n uses 5n + 2 tiles. Which pattern uses 67 tiles? **[4 marks]**

Answer _____

Challenge

16 Show that 125 is not a term in the sequence with nth term 4n + 4. **[4 marks]**

Answer _____

17 Sequence A has nth term 3n + 9. Sequence B has nth term 5n − 1. For which value of n are the terms equal? **[5 marks]**

Answer _____

18 The first term of an arithmetic sequence is 10 and the 10th term is 73. Find the sum of the first 10 terms. **[5 marks]**

Answer _____

19 The nth term of a sequence is 3n + 9. Work out the difference between the 50th term and the 20th term. **[4 marks]**

Answer _____

20 The nth term of a sequence is 6n + 8. The sum of the 5th and 6th terms is the same as the 10th term plus how much? **[5 marks]**

Answer _____