Test - Sequences

Year: Year 7 · Duration: 45 minutes · /20

Name:	Date:	**Mark: /20**

Question	1	2	3	4	5	Total
marks	4	4	4	4	4	**20**
Mark						

Show your working.

Question 1 (4 marks)

Question 1 – Continuing sequences

(a) Write down the next two terms of 5, 11, 17, 23, ... (1 mark)
(b) Write down the rule. (1 mark)
(c) Write down the next two terms of 2, 6, 18, 54, ... (1 mark)
(d) Write down the first five square numbers. (1 mark)

Question 2 (4 marks)

Question 2 – nth term

(a) Find the nth term of 4, 7, 10, 13, ... (2 marks)
(b) Work out the 50th term. (1 mark)
(c) Is 100 a term of the sequence? Explain. (1 mark)

Question 3 (4 marks)

Question 3 – Using a rule

The nth term of a sequence is 5n - 2.

a. Write down the first three terms. (1 mark)
b. Which term is equal to 63? (2 marks)
c. Is 100 in the sequence? Explain. (1 mark)

Question 4 (4 marks)

Question 4 – Problem: the tile patio

A path is made of square paving slabs. Pattern 1 uses 6 slabs, pattern 2 uses 10 slabs and pattern 3 uses 14 slabs.

a. How many slabs are needed for pattern 4? (1 mark)
b. Find an expression for the number of slabs in pattern n. (2 marks)

c. A builder has 100 slabs. What is the largest pattern he can build? (1 mark)

Question 5 (4 marks)

Question 5 – Problem: the savings plan

Sofia opens a savings account with £30. She adds £12 each month. Her brother Leo opens an account with £10 and adds £16 each month.

a. Write an expression for the amount in Sofia's account after n months. (1 mark)
b. Write an expression for Leo's account after n months. (1 mark)
c. After how many months do they have the same amount? (2 marks)