



Name: _____ **Date:** _____ **Score:** _____ / 53

1 Here are the first five terms of a quadratic sequence.

2 7 14 23 34

Find an expression, in terms of n , for the n th term of this sequence.

(2 marks)

Answer _____

2 The n th term of a sequence is $n^2 + 4$.

a. Write down the first three terms of the sequence.

b. Is 85 a term of the sequence? You must show your working.

c. Is 120 a term of the sequence? You must show your working.

(4 marks)

Answer _____

3 Here are the first five terms of a quadratic sequence.

5 11 19 29 41

Find an expression, in terms of n , for the n th term of this sequence.

(2 marks)

Answer _____

4 Here are the first five terms of a quadratic sequence.

1 10 25 46 73

Find an expression, in terms of n , for the n th term of this sequence.

(3 marks)

Answer _____

5 A pattern of tiles is built in stages. Stage 1 uses 2 tiles, stage 2 uses 9 tiles, stage 3 uses 20 tiles and stage 4 uses 35 tiles. The number of tiles in each stage forms a quadratic sequence.

- Find an expression, in terms of n , for the number of tiles in stage n .
- Work out the number of tiles in stage 12.
- Mia says that one stage uses exactly 500 tiles. Is she correct? You must show your working.

(5 marks)

Answer _____

6 Here are the first five terms of a quadratic sequence.

6 15 28 45 66

Find an expression, in terms of n , for the n th term of this sequence.

(3 marks)

Answer _____

7 Here are the first five terms of a quadratic sequence.

0 7 18 33 52

Find an expression, in terms of n , for the n th term of this sequence.

(3 marks)

Answer _____

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

30 27 20 9

- Find an expression, in terms of n , for the n th term.
- Work out the value of the first term in the sequence that is negative.

(4 marks)

Answer _____

9 Here are the first five terms of a quadratic sequence.

4 13 26 43 64

- Find an expression, in terms of n , for the n th term of this sequence.
- Hence find the 10th term of the sequence.

(3 marks)

Answer _____

10 The first term of a quadratic sequence is 2. The differences between consecutive terms are 5, 9, 13, 17, ...

Find an expression, in terms of n , for the n th term of the sequence.

(3 marks)

Answer _____

11 Here are the first five terms of a quadratic sequence.

20 38 52 62 68

Find an expression, in terms of n , for the n th term of this sequence.

(3 marks)

Answer _____

12 Here are the first five terms of a quadratic sequence.

3 8 14 21 29

Find an expression, in terms of n , for the n th term of this sequence.

(3 marks)

Answer _____

13 The n th term of a sequence is $2n^2 + 5n$.

Show that the difference between the $(n + 1)$ th term and the n th term is $4n + 7$.

(3 marks)

Answer _____

14 The n th term of a quadratic sequence is $an^2 + bn$, where a and b are constants.

The 2nd term of the sequence is 10.

The 4th term of the sequence is 36.

a. Find an expression, in terms of n , for the n th term of the sequence.

b. Find the value of n for which the n th term of the sequence is 105.

(6 marks)

Answer _____

15 Here are the first five terms of a quadratic sequence.

7 16 29 46 67

- Find an expression, in terms of n , for the n th term of this sequence.
- Show that 500 is not a term of this sequence.

(6 marks)

Answer _____

End of questions | Total 53 marks