



2.12 – Sequences

Student name: _____ Score: _____

1. The first five terms of a sequence are 0, 3, 8, 15, 24.

(a) Write down the next two terms of the sequence.

..... 35 , 48 [1]

(b) Find the n th term of the sequence.

..... $n^2 - 1$ [2]

2. The first four terms of a sequence are 1, 3, 9, 27.

(a) Write down the next term of this sequence.

..... 81 [1]

(b) Find an expression for the n th term of this sequence.

..... 3^{n-1} [2]

3. The first five terms of a sequence are

-2, 1, 6, 13, 22.

(a) Write down the next term in the sequence.

..... 33 [1]

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

..... $n^2 - 3$ [1]

4. Find the next two terms in this sequence.

1, 2, 6, 15, 31,

..... 56 , 92 [2]

5. These are the first four terms of a sequence.

15 11 7 3

Find

(a) the next term,

..... -1 [1]

(b) the n th term.

..... $-4n + 19$ [2]

6. These are the first five terms of a sequence.

2 6 12 20 30

(a) Find the next term.

.....42..... [1]

(b) Find an expression for the n th term.

..... $n(n + 1)$ [3]

7. Find the next term in each of these sequences.

(a) 3, 5, 8, 12, 17, 23..... [1]

(b) 100, 91, 80, 67, 52, 35..... [1]

(c) 4, 12, 36, 108, 324, 972..... [1]

8. Find the next term in each of these sequences.

(a) 81, 77, 72, 66, 59, 51..... [1]

(b) 3, -6, 12, -24, 48, -96..... [1]

(c) 16, 8, 4, 2, 1, 0.5..... [1]

9. Here are the first four terms of a sequence.

11 8 5 2

Write down the next term of the sequence.

.....-1..... [1]

10. 6, 12, 24, 48, 96, ...

(a) Write down the next term in the sequence.

.....192..... [1]

(b) Find the 8th term in the sequence.

.....768..... [1]

(c) Find an expression for the n th term of the sequence.

..... $3(2^n)$ oe $6(2^{n-1})$ $(2^{n+2} - 2^n)$ [2]



11. Find the n th term of this sequence.

-1, 0, 3, 8, 15,

$n^2 - 2n$ [3]

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

3 7 11 15 19

(a) Write down the next term.

23 [1]

(b) Find the n th term of the sequence.

$4n - 1$ [2]

13. The first 4 terms of a sequence are 20, 13, 6 and -1.

Find

(a) the next term,

-8 [1]

(b) the n th term.

$-7n + 27$ [2]

14. Here are the first four terms of a sequence.

11 8 5 2

Write down the next term of the sequence.

-1 [1]

15. These are the first five terms of a sequence.

1 0 1 4 9

Find the n th term of this sequence.

$(n - 2)^2$ [2]

Here are the first four terms of a sequence.

13 9 5 1

16. (a) Write down the next term.

-3 [1]

(b) Find an expression, in terms of n , for the n th term.

$17 - 4n$ [2]

17. 9, 27, 81, 243, ...

Find the n th term of this sequence.

3^{n+1} [2]



18. Here are the first five terms of a sequence.

$$\frac{1}{4} \quad 1 \quad 4 \quad 16 \quad 64$$

(a) Find the next term.

$$\dots\dots\dots 256 \dots\dots\dots [1]$$

(b) Find the n th term.

$$\dots\dots\dots 4^{n-2} \dots\dots\dots [2]$$

19. Find the next term and an expression for the n th term of the following sequence.

$$-9, \quad -3, \quad 7, \quad 21, \quad 39, \quad \dots$$

$$\text{next term} = \dots\dots\dots 61 \dots\dots\dots$$

$$n\text{th term} = \dots\dots\dots 2n^2 - 11 \dots\dots\dots [3]$$

20. These are the first four terms in a sequence.

$$27 \quad 19 \quad 11 \quad 3$$

(a) Write down the next term.

$$\dots\dots\dots -5 \dots\dots\dots [1]$$

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

$$\dots\dots\dots 35 - 8n \dots\dots\dots [2]$$

21. Find an expression for the n th term of each sequence.

(a) 1, 7, 13, 19, 25, ...

$$\dots\dots\dots 6n - 5 \dots\dots\dots [2]$$

(b) 1, -2, 3, -4, 5, ...

$$\dots\dots\dots n(-1)^{n+1} \dots\dots\dots [2]$$

