Topic Test 1 (20 minutes)
Sequences - Higher

1   Here are the first five terms of a sequence.

| 15 | 13 | 11 | 9 | 7 |

Circle the expression for the nth term of the sequence.

[1 mark]

| $2n + 13$ | $n - 2$ | $17 - 2n$ | $15 - 2n$ |

2   Circle the value that is **not** a term in the geometric series with nth term 2×3^n

[1 mark]

| 18 | 54 | 152 | 486 |

3   The nth term of sequence A is $2n + 3$
The nth term of sequence B is $5n - 4$

Work out **two** terms that are in both sequences.

[2 marks]

_____

_____

_____

_____

_____

Answer _____

4 The nth term of sequence P is $\quad an + b$

The nth term of sequence Q is $\quad bn + a$

4 (a) Show that the sequences both start with the same term.

[1 mark]

_____

_____

4 (b) The 2nd term of sequence P equals the 3rd term of sequence Q.

Show that $\quad a = 2b$

[2 marks]

_____

_____

_____

5 The nth term of a sequence is $\quad \dfrac{12 - n}{n^2}$

Work out the first term of the sequence that is a recurring decimal.

[2 marks]

_____

_____

Answer _____ th term

6   The nth term of a sequence is $n^2(n + 1)$

6 (a)   Show that the 3rd term of the sequence is 36

[1 mark]

6 (b)   Work out the 10th term of the sequence.

[2 marks]

Answer _____

6 (c)   Prove that all the terms of the sequence are even.

[2 marks]

7   The first four terms of a quadratic sequence are

9   23   45   75

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

[2 marks]

Answer _____ and _____

7 (b)   Work out the nth term of the sequence.

[4 marks]

Answer _____