FOUNDATION & HIGHER

HIGHER EXTENDS

Name ..... Class .....

A25: nth term

Deduce expressions for the nth term of linear and quadratic sequences

20 marks · 25 minutes · Non-calculator

1) Find an expression for the *n*th term of 7, 11, 15, 19, ...

.....

[Question 1: 2 marks]

2) Find an expression for the *n*th term of 20, 17, 14, 11, ...

.....

[Question 2: 2 marks]

3) Find an expression for the *n*th term of 4, 11, 22, 37, 56, ...

.....

[Question 3: 3 marks]

4) Find an expression for the *n*th term of 0, 5, 12, 21, 32, ...

.....

[Question 4: 3 marks]

5) Find an expression for the *n*th term of 3, 9, 15, 21, ...

.....

[Question 5: 2 marks]

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6) Find an expression for the *n*th term of 2, 8, 18, 32, 50, ...

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[Question 6: 1 marks]

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7) Find an expression for the *n*th term of 5, 8, 13, 20, 29, ...

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[Question 7: 2 marks]

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8) Find an expression for the *n*th term of 1, 7, 17, 31, 49, ...

.....

[Question 8: 2 marks]

9) Find an expression for the *n*th term of 6, 13, 24, 39, 58, ...

.....

[Question 9: 3 marks]

End of paper – 20 marks in total

Answers and brief mark scheme

Q	Answer	Method / notes
1	$4n + 3$	$4n$ (M1); A1.
2	$23 - 3n$	$-3n$ (M1); A1.
3	$2n^2 + n + 1$	Second difference 4, so $2n^2$ (M1); remaining $n + 1$ (M1); A1.
4	$n^2 + 2n - 3$	Second difference 2, so n^2 (M1); remaining $2n - 3$ (M1); A1.
5	$6n - 3$	$6n$ (M1); A1.
6	$2n^2$	B1.
7	$n^2 + 4$	n^2 (M1); A1.
8	$2n^2 - 1$	$2n^2$ (M1); A1.
9	$2n^2 + n + 3$	$2n^2$ (M1); remaining $n + 3$ (M1); A1.