

Quadratic Sequences

Please write clearly in block capitals

Forename:

Surname:

Materials

For this paper you must have:

- mathematical instruments



You **can** use a calculator.

Instructions

- Use black ink or black ball-point pen. Draw diagrams in pencil.
- Fill in the boxes at the top of this page.
- Answer all questions.
- You must answer the questions in the spaces provided. Do not write outside the box around each page or on blank pages.
- Do all rough work in this book. Cross through any work you do not want to be marked.

Information

- The marks for questions are shown in brackets.
- You may ask for graph paper, tracing paper and more answer paper. These must be tagged securely to this answer book.

Advice

- In all calculations, show clearly how you work out your answer.

1(a) Given the sequence,

3, 6, 11, 18

What is the next term?

Circle your answer below.

[1 mark]

23

25

27

29

1(b) Consider the following quadratic sequence

$$n^2 + 4n - 7$$

What is the 5th term in the sequence?

Circle your answer below.

[1 mark]

38

18

52

12

1(c) Circle the quadratic sequence from the list of sequences below.

[1 mark]

7, 0, -5, -8, -9

1, 1, 2, 3, 5

2, 8, 11, 14, 17

3, 5, 7, 10

Turn over for next question

2 Use the following quadratic equation:

$$n^2 + 6n - 10$$

2(a) List the first 5 terms in the sequence.

[2 marks]

Answer _____

2(b) Does the number 765 appear in this sequence.

Show your working below.

[1 mark]

Answer _____



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Turn over ►

3 Find the n th term for the following sequences,

3(a) 14, 20, 28, 38, 50

[3 marks]

Answer _____

3(b) 0, 0, 2, 6, 12

[3 marks]

Answer _____

3(c) 4, 5, 8, 13, 20

[3 marks]

Answer _____

3(d) 100, 96, 90, 82, 72

[3 marks]

Answer _____

Turn over for next question

4 Find the n th term for the following sequences,

4(a) 2, 6, 12, 20, 30

[3 marks]

Answer _____

4(b) 3, 10, 21, 36, 55

[3 marks]

Answer _____

4(c) 0, 5, 12, 21, 32

[3 marks]

Answer _____

4(d) 1, 9, 19, 31, 45

[3 marks]

Answer _____

Turn over for next question

5 A quadratic sequence is shown below.

$$x, (x + y), (x + y + 4), (x + y + 10)$$

The sequence has an n th term of $n^2 - n + 5$

Find the values of x and y .

[2 marks]

Answer _____

End of Questions