MME
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GCSE MATHEMATICS

AQA | Edexcel | OCR | WJEC

(Level 6 - 7)

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, *(Level 6)*

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

3

2 Use the following quadratic equation: *(Level 6)*

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

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 _____

3 Find the nth term for the following sequences, *(Level 6)*

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

12

4 Find the nth term for the following sequences, *(Level 6)*

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

12

5 A quadratic sequence is shown below. *(Level 7)*

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

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

Find the values of x and y.

[2 marks]

Answer _____

3

END