

Quadratic Inequalities (Algebraically)

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) For which values of x is the following inequality true?

(Level 6)

$$x^2 - 3x + 4 > 2$$

[1 mark]

$$x = 0$$

$$x = 2$$

$$x = 1$$

$$x = 3$$

1(b) For which inequality is the value of x true?

$$x = 7$$

[1 mark]

$$x^2 - 7x + 7 < 7$$

$$-x^2 + 7x + 7 < 7$$

$$x^2 + 7x - 7 < 7$$

$$-x^2 + 7x - 7 < 7$$

1(c) Which solutions satisfy the following inequality?

$$x^2 + 7x - 30 < 0$$

[1 mark]

$$3 < x < 4$$

$$-10 < x < 3$$

$$-3 < x < 10$$

$$-5 < x < 6$$

Turn over for next question

2 Solve the following inequalities:

(Level 6)

2(a) $x^2 + 5x - 13 \leq 1$

[2 marks]

Answer

2(b) $7x^2 - 22x + 16 \leq 0$

[2 marks]

Answer

2(c) $x^2 > 4(8 - x)$

[2 marks]

Answer

2(d) $x^2 - x - 30 \geq 0$

[2 marks]

Answer

Turn over for next question

3

Donald and Amir disagree about the solution to the inequality,

(Level 7)

$$x^2 - 4x - 13 \geq -8$$

Donald claims that the solution is $x \leq -1$

Amir states that the solution is $x \geq 5$

Who is correct and why?

[3 marks]

Answer _____



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Turn over ►

(Level 7)

determine if the solution is,

[4 marks]

This image shows a blank sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

Answer _____



- ✔ GCSE Maths predicted papers and mark schemes
- ✔ Paper 1, 2, 3 and mark scheme in every set
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Solve for the following inequality,

(Level 7)

$$x^2 - 9x - 5 \leq -4x - 9$$

[3 marks]

$$\underline{\hspace{2cm}} \leq x \leq \underline{\hspace{2cm}}$$



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