MME

GCSE MATHEMATICS
AQA | Edexcel | OCR | WJEC

Completing The Square

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   Write the following in the form $(x + a)^2 + b$ where a and b are integers:

1(a) $x^2 + 4x + 5$

[2 marks]

Answer _____

1(b) $x^2 - 14x - 1$

[2 marks]

Answer _____

1(c) $x^2 - 24x + 5$

[2 marks]

Answer _____

Turn over for next question

6

Turn over ►

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2   Write the following in the form $(x + a)^2 + b$ where a and b are integers:

2(a) $x^2 + 10x + 8$

[2 marks]

_____

_____

_____

_____

Answer   _____

2(b) $x^2 - 4x + 1\,6$

[2 marks]

_____

_____

_____

_____

Answer   _____

2(c) $x^2 - 8x + 14$

[2 marks]

_____

_____

_____

_____

Answer   _____

Turn over for next question

6

Turn over ▶

3 Write the following in the form $(x + a)^2 + b$ where a and b are integers:

3(a) $$x^2 + 6x + 20$$

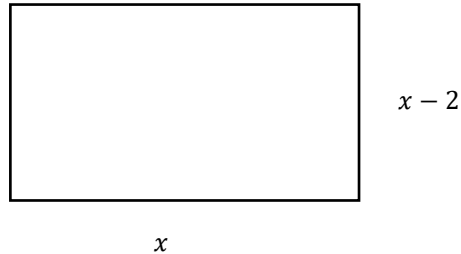**[2 marks]**

Answer _____

3(b) $$x^2 + 12x - 8$$

[2 marks]

Answer _____

3(c) $$x^2 - 2x - 6$$

[2 marks]

Answer _____

Turn over for next question

6

Turn over ▶

4   A rectangle has sides of x and $(x-2)$ cm

The area of the rectangle is 3 cm^2

Not drawn accurately

$x-2$

x

4(a)   Show that $(x-1)^2 - 4 = 0$

[3 marks]

Answer _____

4(b)   Hence, or otherwise, find the perimeter of the rectangle.

[3 marks]

Answer _____

Turn over for next question

Turn over ▶

5   Bob adds a number, that is larger than 1, to its reciprocal.

His answer is 4.

Find Bob's number in the form $a \pm \sqrt{b}$

[5 marks]

Answer _____

GCSE Maths Revision Guide

⊘ GCSE Maths Course 9-1 Revision Guide

⊘ Exam Questions Included

⊘ All exam boards - AQA, OCR, Edexcel, WJEC
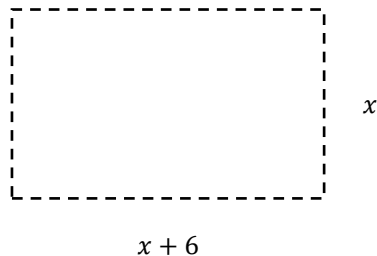
⊘ Suitable for higher and foundation tiers

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6   A small farmers field is shown below.

Not drawn
accurately

x

$x + 6$

Given that the area of the field is 36 m^2

Find the perimeter of the field in meters.

Give your answer in the form $a\sqrt{5}$ where a is an integer.

[6 marks]

Answer _____

End of Questions

END