


Centre Number						Candidate Number				
Surname										
Other Names										
Candidate Signature										

For Examiner's Use	
Examiner's Initials	
Pages	Mark
3	
4 – 5	
6 – 7	
8 – 9	
TOTAL	



GCSE Mathematics (Calculator Paper)

Practice Paper Style Questions Topic: Quadratic Equations (Higher Tier)

<p>For this paper you must have:</p> <ul style="list-style-type: none"> • black pen • HB pencil • ruler (with cm & mm) • rubber • protractor • compass • pencil sharpener • calculator 	
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Time allowed

- 1 hour

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 space 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 that you do not want to be marked.

Information

- The marks for questions are shown in brackets.
- The maximum mark for this paper is **50**.
The quality of your written communication is specifically assessed in questions indicated with an asterisk (*)
- You may ask for more answer paper and graph paper.
These must be tagged securely to this answer booklet.
- A calculator **MAY** be used.

Advice

- Read each question carefully before you answer it.
- In all calculations, show clearly how you work out your answer.
- Check your answers if you have time at the end.

There are no questions printed on this page

**DO NOT WRITE ON THIS PAGE
ANSWER IN THE SPACES PROVIDED**

1 Simplify fully

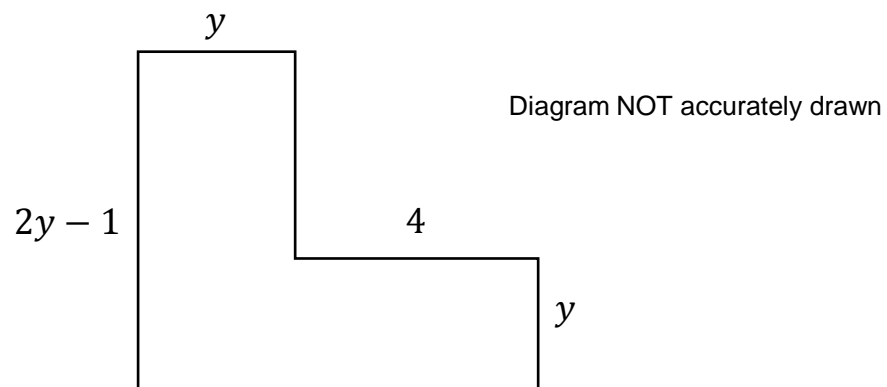
$$\frac{10x^2 + 3x - 1}{4x^2 - 1}$$

Answer (3 marks)

2 The diagram below shows a 6-sided shape.

All the corners are right angles.

All the measurements are given in centimetres.



The area of the shape is 76cm^2 .

(a) Show that $2y^2 + 3y - 76 = 0$

Answer (3 marks)

(b) Solve the equation $2y^2 + 3y - 76 = 0$

Give your solutions correct to 3 significant figures.

Answer $y=$ or $y=$ (3 marks)

3 Simplify fully

$$\frac{x^2 - 7x + 12}{2x^2 - 5x - 7}$$

Answer (3 marks)

4 (a) Rearrange this equation $\frac{4}{x-1} = \frac{5-2x}{x+2}$ to give $2x^2 - 3x + 13$

(3 marks)

(b) Solve $3x^2 + 7x - 13 = 0$ correct to 2 decimal places.

Answer $x =$or.... $x =$ (3 marks)

5 (a) Expand and simplify $(x + 4)(x - 3)$

Answer (2 marks)

(b) Factorise $x^2 + x - 6$

Answer (2 marks)

(c) $x = 3y + 2(z - y)$

Find the value of x when $y = 5$ and $z = 4$

Answer $x =$ (3 marks)

6 (a) Factorise $x^2 - 7x + 12$

Answer (2 marks)

(b) Solve $x^2 - 7x + 12$

Answer $x =$*or*..... $x =$ (2 marks)

7 (a) Simplify $6a + 3c + 2a - c$

Answer (1 mark)

(b) Factorise $x^2 - 3x$

Answer (2 marks)

(c) $S = \frac{1}{4}at^2$

Find the value of S when $t = 2$ and $a = \frac{1}{5}$

Answer $S =$ (2 marks)

(d) Factorise $y^2 + 7y + 12$

Answer (2 marks)

(e) Expand and simplify $(x + 2)(x + 4)$

Answer (2 marks)

8 (a) Simplify $(a^3b^4)^2$

Answer (1 mark)

(b) Expand and simplify $(3x + 4)(5x - 1)$

Answer (2 marks)

(c) Solve $x^2 + 3x - 10$

Answer $x =$ or $x =$ (2 marks)

9 The plan below show a large rectangle of length $(2x + 5)$ m and width x m.

A smaller rectangle of length x m and width 4m is cut out and removed.

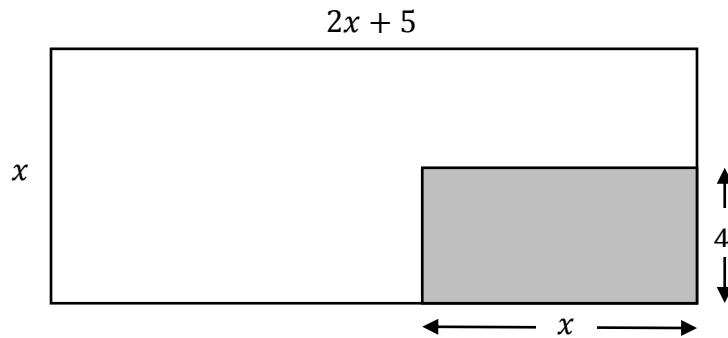


Diagram
NOT drawn
to scale

A smaller rectangle of length x m and width 4m is cut out and removed.

(a) Show that $2x^2 + x - 80 = 0$

(3 marks)

(b) Calculate the length of the smaller rectangle.

Give your answer correct to 3 significant figures.

Answerm..... (4 marks)

END OF QUESTIONS

There are no questions printed on this page

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ANSWER IN THE SPACES PROVIDED**

