Write your name here

Surname	Other names

In the style of:

Edexcel GCSE

Centre Number	Candidate Number

Mathematics A

Quadratic Equations

Higher Tier

Past Paper Style Questions
Arranged by Topic

Paper Reference
1MA0/1H

You must have: Ruler graduated in centimetres and millimetres, protractor, pair of compasses, pen, HB pencil, eraser. Tracing paper may be used.

Total Marks

Instructions

- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Answer **all** questions.
- Answer the questions in the spaces provided
  – *there may be more space than you need.*
- **Calculators must not be used.**

Information

- The total mark for this paper is 100
- The marks for **each** question are shown in brackets
  – *use this as a guide as to how much time to spend on each question.*
- Questions labelled with an **asterisk** (*) are ones where the quality of your written communication will be assessed.

Advice

- Read each question carefully before you start to answer it.
- Keep an eye on the time.
- Try to answer every question.
- Check your answers if you have time at the end.

Turn over ▶

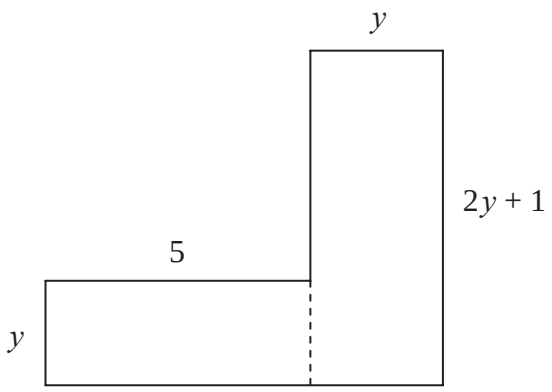
1. Simplify fully $\dfrac{6x^2 + x - 1}{4x^2 - 1}$

.....

(Total 4 marks)

2. The diagram below shows a 6-sided shape.
All the corners are right angles.
All the measurements are given in centimetres.

Diagram **NOT** accurately drawn



The area of the shape is 95 cm^2.

(a) Show that $2y^2 + 6y - 95 = 0$

(3)

(b) Solve the equation

$$2y^2 + 6y - 95 = 0$$

Give your solutions correct to 3 significant figures.

y = ... or y = ...

(3)

(Total 6 marks)

3. Simplify fully $\dfrac{x^2-8x+15}{2x^2-7x-15}$

.....

(Total 3 marks)

4. (a) Rearrange this equation

$$\frac{5}{x+2} = \frac{4-3x}{x-1}$$

to give $3x^2 + 7x - 13 = 0$

(3)

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

$x =$ ..... or $x =$ .....

(3)

(Total 6 marks)

5. (a) Expand and simplify $(x + 3)(x - 2)$

.....

(2)

(b) Factorise $x^2 + 7x + 10$

.....

(2)

(c) $x = 3y + 4(z - y)$

Find the value of x when $y = 6$ and $z = 5$

$x =$ .....

(3)

(Total 7 marks)

6. (a) Factorise $x^2 - 7x + 10$

.....

(2)

(b) Solve $x^2 - 7x + 10 = 0$

$x =$ .....

or $x =$ .....

(1)

(Total 3 marks)

7. (a) Simplify $4a + 3c - 2a + c$

.....

(1)

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

Find the value of S when $t = 3$ and $a = \frac{1}{4}$

S = ...

(2)

(c) Factorise $x^2 - 5x$

.....

(2)

(d) Expand and simplify $(x + 3)(x + 4)$

.....

(2)

(e) Factorise $y^2 + 8y + 15$

.....

(2)

(Total 9 marks)

8 (a) Simplify $(c^2\ k^5)^4$

.....

(1)

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

.....

(2)

(c) Solve $x^2 - 3x - 10 = 0$

$x =$ .....

(Total 6 marks)

9 The plan below shows a large rectangle of length $(2x + 6)$ m and width x m.

A smaller rectangle of length x m and width 3 m is cut out and removed.

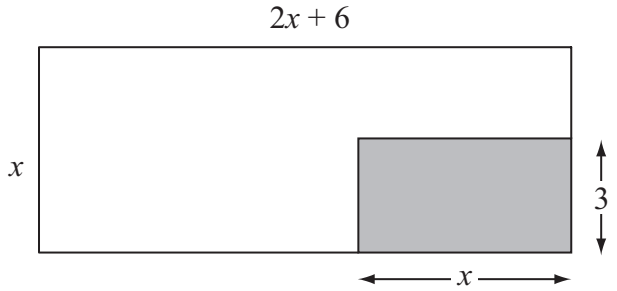


Diagram **NOT** accurately drawn

The area of the shape that is left is 100 m^2.

(a) Show that $2x^2 + 3x - 100 = 0$

(3)

(b) Calculate the length of the smaller rectangle.
Give your answer correct to 3 significant figures.

..... m

(4)

(Total 7 marks)