Please check the examination details below before entering your candidate information

Candidate surname	Other names

Centre Number | Candidate Number

Spring 2026

Pearson Edexcel Level 1/Level 2 GCSE (9–1)

AIMING FOR GRADE 8

42 marks (40 minutes)

Paper reference **1MA1/3H**

Mathematics

Paper 3 (Calculator)
Higher Tier

You must have: Ruler graduated in centimetres and millimetres, protractor, pair of compasses, pen, HB or B pencil, eraser, calculator, Formulae Sheet (enclosed). 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.*
- You must **show all your working.**
- Diagrams are **NOT** accurately drawn, unless otherwise indicated.
- **Calculators may be used.**

Information

- The total mark for this paper is 42. There are 10 questions.
- Questions have been broadly arranged in an ascending order of mean difficulty, as found by students achieving Grade 8 in the Summer and November 2025 examinations.
- Questions marked with an asterisk (*) also appear on the Foundation Tier paper.
- The marks for **each** question are shown in brackets
  – *use this as a guide as to how much time to spend on each question.*

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.

Answer all questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

1 Solve algebraically the simultaneous equations

$$3x^2 + 2y^2 = 44$$
$$3x + y = 2$$

.....

(Total for Question 1 is 5 marks)

2 The students in class X and the students in class Y did the same science test.

Here are the marks of the students in class X.

30	31	33	37	40	42	43	43	45	46	46	48
50	52	53	53	55	56	58	63	66	68	69	

(a) Complete the table below to show information about the marks of the students in class X.

Median	48
Range	
Interquartile range	

(3)

Here is some information about the marks of the students in class Y.

Median	45
Range	41
Interquartile range	16

Tanya says that the information in the tables shows that class X did better in the test than class Y.

(b) Is Tanya correct? You must give a reason for your answer.

.....

.....

(1)

Amar says that the information in the tables shows that the marks of class X vary more than the marks of class Y.

(c) Is Amar correct? You must give a reason for your answer.

.....

.....

(1)

(Total for Question 2 is 5 marks)

3 There are only blue counters and red counters in a box.
There are 5 times as many blue counters as red counters.

Ashley takes at random one counter from the box.
He records the colour of the counter, then puts the counter back in the box.
Ashley does this 3 times.

(a) Find the probability that Ashley takes a counter of the same colour all 3 times.

.....

(3)

The number of blue counters in the box is doubled.
The number of red counters in the box is doubled.

Ashley takes 3 counters in the same way as in part (a).

Ashley thinks that the probability that he takes a counter of the same colour all 3 times is the same as the answer in part (a).

(b) Is Ashley correct?
Give a reason for your answer.

.....

.....

.....

(1)

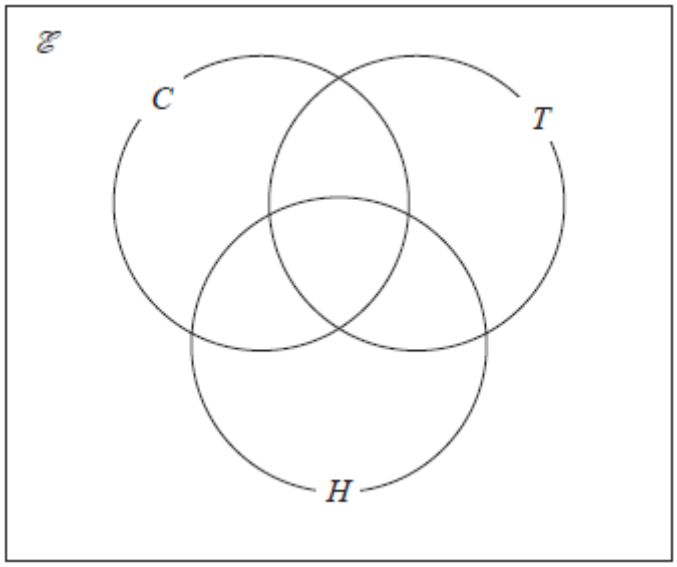
(Total for Question 3 is 4 marks)

4 Magda carried out a survey to find out the drinks that people like.

She asked 100 people if they like coffee (C) or tea (T) or hot chocolate (H).

32 people like all three drinks.
15 people like coffee and hot chocolate but **not** tea.
43 people like coffee and tea.
39 people like tea and hot chocolate.
67 people like coffee.
58 people like hot chocolate.
5 people like **only** tea.

(a) Complete the Venn diagram for this information.



(4)

One of the people is chosen at random.

Given that this person likes coffee,

(b) find the probability that this person also likes hot chocolate.

.....

(2)

(Total for Question 4 is 6 marks)

5 Tina sells bikes.

In November, Tina sold 25% fewer bikes than she sold in October.
In December, Tina sold 50% more bikes than she sold in November.

In December, Tina sold 180 bikes.

(b) How many bikes did Tina sell in October?

.....

(Total for Question 5 is 3 marks)

6 (a) Show that the equation $2x^3 + x - 8 = 0$ has a solution between $x = 1$ and $x = 2$

(1)

(b) Show that the equation $2x^3 + x - 8 = 0$ can be written in the form $x = \sqrt[3]{\dfrac{8-x}{2}}$

(1)

(c) Starting with $x_0 = 1.5$ use the iteration formula $\sqrt[3]{\dfrac{8-x_n}{2}}$ three times to find an estimate for a solution of $2x^3 + x - 8 = 0$ correct to 3 decimal places.

.....

(3)

(Total for Question 6 is 5 marks)

7 The functions f and g are such that

$$f(x) = 3x - 6 \qquad g(x) = \frac{2x^2}{x^2 + 1}$$

Find fg(x)
Give your answer as a single fraction in its simplest form.

.....

(Total for Question 7 is 3 marks)

8 Given that

$$y : x^2 = 6 : 1 \quad \text{and} \quad x + y = 1$$

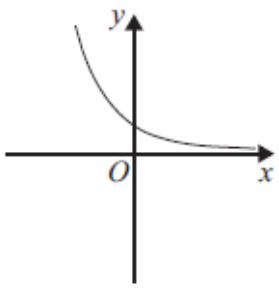
find the possible values of x and y.

.....

(Total for Question 8 is 5 marks)

9 Here are some graphs.

A



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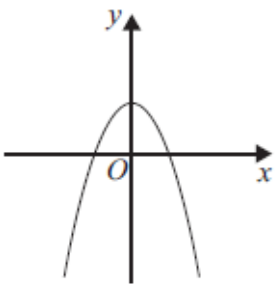

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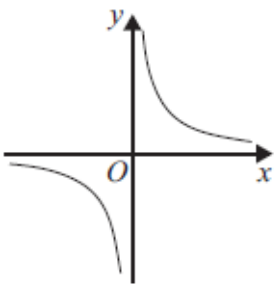

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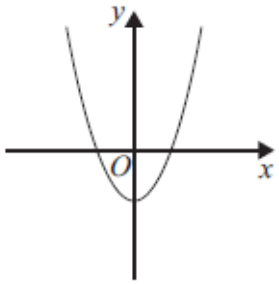

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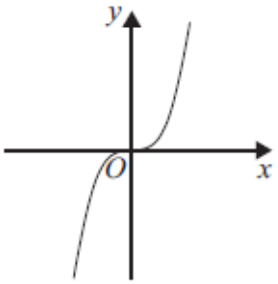

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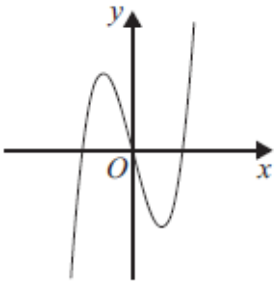

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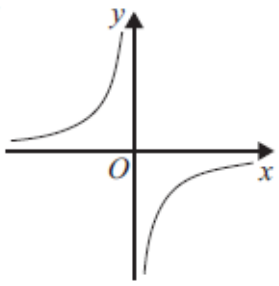
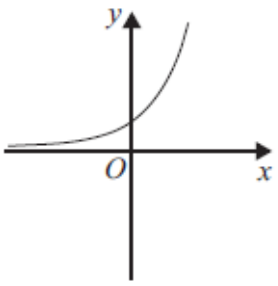


H



Each equation in the table is the equation of one of the graphs. Complete the table.

Equation	Letter of graph
$y = x^3$	
$y = \frac{2}{x}$	
$y = 5 - x^2$	
$y = 3^x$	

(Total for Question 9 is 3 marks)

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

$x =$ .....

(Total for Question 10 is 3 marks)

TOTAL FOR PAPER IS 42 MARKS