

Paper Reference 1MA1/2F
Pearson Edexcel
Level 1/Level 2 GCSE (9–1)

Total Marks

Mathematics
PAPER 2
(Calculator)
Foundation Tier

Time: 1 hour 30 minutes plus your additional time allowance

In the boxes below, write your name, centre number and candidate number.

Surname					
Other names					
Centre Number					
Candidate Number					

YOU MUST HAVE

Ruler, protractor, compasses, writing and drawing equipment, calculator. Tracing paper may be used.

YOU WILL BE GIVEN

Diagram Booklet

Turn over

INSTRUCTIONS

Answer ALL questions.

Answer the questions in the spaces provided in this Question Paper or on the separate diagrams – 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.

If your calculator does not have a π button, take the value of π to be 3.142 unless the question instructs otherwise.

Turn over

INFORMATION

The total mark for this paper is 80

The marks for EACH question are shown in brackets – use this as a guide as to how much time to spend on each question.

You may be provided with a shape for Question 11

There may be spare copies of some diagrams in case you need them.

ADVICE

Read each question carefully before you start to answer it.

Try to answer every question.

Check your answers if you have time at the end.

5

Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

Turn over

1. Write 31% as a fraction.

(Total for Question 1 is 1 mark)

2. Change 3 metres into centimetres.

_____ centimetres

(Total for Question 2 is 1 mark)

3. Write the following four numbers in order of size.

Start with the smallest number.

1·02

0·12

1·20

0·21

(Total for Question 3 is 1 mark)

4. (a) Simplify

$$m + m + m + m$$

(1 mark)

(b) Simplify

$$12p \div 4$$

(1 mark)

(Total for Question 4 is 2 marks)

Turn over

5. Look at the diagram and the grid for Question 5 in the Diagram Booklet.

The diagram shows a rectangle with length 35 metres and width 20 metres.

On the grid in the Diagram Booklet, draw an accurate scale drawing of the rectangle.

Use a scale of 1 square length on the grid represents 5 metres.

(Total for Question 5 is 2 marks)

6. Below is a list of ten whole numbers from 21 to 30

21	22	23	24	25
26	27	28	29	30

(a) From the list, write down a square number.

(1 mark)

(continued on the next page)

Turn over

6. continued.

Remember:

21	22	23	24	25
26	27	28	29	30

**(b) From the list, write down a
multiple of 8
(1 mark)**

(Total for Question 6 is 2 marks)

Turn over

- 7. A baker has three bags of flour, A, B and C**

Bag A and bag B contain the same amount of flour.

Bag C contains 940 grams of flour.

In the three bags, there is a total of 2500 grams of flour.

Work out the amount of flour in bag A

(3 marks)

Answer space is on the next page.

Turn over

7. continued.

_____ grams

(Total for Question 7 is 3 marks)

Turn over

8. Look at the diagram for Question 8 in the Diagram Booklet.

It shows a vertical line graph.

Five students throw a dice.

They each throw the dice the same number of times.

The diagram gives information about the number of times the dice lands on each number.

Work out how many times each student throws the dice.

(3 marks)

Answer space is on the next page.

8. continued.

(Total for Question 8 is 3 marks)

Turn over

9. Alec needs to work out the value of
 $2 + 3 \times 4$

He writes

$2 + 3 = 5$ and $5 \times 4 = 20$,
so $2 + 3 \times 4 = 20$

Alec is wrong.

Explain why.

(Total for Question 9 is 1 mark)

Turn over

10. Write 17 as a fraction of 30

(Total for Question 10 is 1 mark)

11. Look at the diagram for Question 11 in the Diagram Booklet.

It shows shape **A on a grid.**

Reflect shape **A in the mirror line.**

A cut out shape may be available if you wish to use it.

(Total for Question 11 is 2 marks)

12. (a) Work out

$$\sqrt{\frac{13.82}{4.06}}$$

**Write down all the figures on
your calculator display.**

(2 marks)

(continued on the next page)

Turn over

12. continued.

- (b) Give your answer to part (a)
correct to 2 decimal places.
(1 mark)**
-

(Total for Question 12 is 3 marks)

13. Look at the diagram for Question 13 in the Diagram Booklet.

It shows the straight line RST

The angles x° , 75° and 84° are marked on the line.

- (i) Work out the value of x**
(2 marks)

(continued on the next page)

Turn over

13. continued.

(ii) Give a reason for your answer.

(1 mark)

(Total for Question 13 is 3 marks)

Turn over

14. Look at the diagram for Question 14 in the Diagram Booklet.

Nazima uses the graph to find out how much money she is paid for the number of hours she has worked.

(a) How much money is Nazima paid for each hour she works?

(1 mark)

£ _____

(continued on the next page)

Turn over

14. continued.

**Last week Nazima worked for
36 hours.**

**(b) How much money was Nazima
paid?**

(2 marks)

**Answer space continues on the
next page.**

14. (b) continued.

£ _____

(Total for Question 14 is 3 marks)

Turn over

15. Write the following four fractions in order of size.

Start with the smallest fraction.

$$\frac{5}{8}$$

$$\frac{2}{3}$$

$$\frac{4}{9}$$

$$\frac{3}{5}$$

(Total for Question 15 is 2 marks)

Turn over

16. Look at the diagram for Question 16 in the Diagram Booklet.

It shows a pie chart which gives information about the colour of each car in a car park.

There are black cars, white cars and cars in other colours.

There are 135 black cars in the car park.

(a) Work out the number of white cars in the car park.

(3 marks)

Answer space is on the next page.

16. (a) continued.

(continued on the next page)

Turn over

16. continued.

There are 50 grey cars in the car park.

A car in the car park is picked at random.

(b) Find the probability that this car is grey.

(2 marks)

Answer space continues on the next page.

16. (b) continued.

(Total for Question 16 is 5 marks)

Turn over

17. Look at the diagram for Question 17 in the Diagram Booklet.

**It shows an incomplete frequency tree.
60 people are asked if they prefer to text or to email their friends.**

38 of the people are women and the rest are men.

15 of the men prefer to email their friends.

60% of the people prefer to text their friends.

**Complete the frequency tree in the Diagram Booklet for this information.
There are six spaces to fill.**

(Total for Question 17 is 5 marks)

18. Look at the incomplete table for Question 18 in the Diagram Booklet. It gives some information about the lengths of the planks of wood in Ben's workshop.

The total length of these planks is 92 metres.

**Work out the number of planks of length 2 metres in Ben's workshop.
(3 marks)**

Answer space continues on the next page.

18. continued.

(Total for Question 18 is 3 marks)

Turn over

19. Rachel, Samina and Tom share £600 between them.

Rachel gets $\frac{2}{5}$ of the £600

Samina gets $\frac{1}{4}$ of the money that is left over.

Tom gets the rest of the money.

(continued on the next page)

19. continued.

Tom says,

“I would have got more money if we had shared the £600 equally between us.”

Is Tom correct?

You must show how you get your answer.

(4 marks)

Answer space continues on the next two pages.

Turn over

19. continued.

Turn over

19. continued.

(Total for Question 19 is 4 marks)

Turn over

20. (a) Simplify

$$p^5 \div p^2$$

(1 mark)

(b) Simplify

$$(q^4)^3$$

(1 mark)

(Total for Question 20 is 2 marks)

Turn over

**21. (a) Look at the diagram for
Question 21(a) in the
Diagram Booklet.**

It shows a number line.

**Write down the inequality shown
on the number line.**

(1 mark)

(continued on the next page)

21. continued.

**(b) Look at the diagram for
Question 21(b) in the
Diagram Booklet.**

It shows a blank number line.

**On the number line, show the
inequality**

$$-3 \leq y < 4$$

(2 marks)

(Total for Question 21 is 3 marks)

- 22. (a) Find the Highest Common Factor (HCF) of 60 and 84**
(2 marks)

Answer space continues on the next page.

22. (a) continued.

(continued on the next page)

Turn over

22. continued.

**(b) Find the Lowest Common
Multiple (LCM) of 24 and 40
(2 marks)**

**Answer space continues on the
next page.**

22. (b) continued.

(Total for Question 22 is 4 marks)

Turn over

23. Look at the diagram for Question 23 in the Diagram Booklet.

Sam drives his car on a journey.

The travel graph for the first 15 minutes of his journey is shown in the Diagram Booklet.

(a) Work out Sam's speed, in km/h, for the first 15 minutes of his journey.

(2 marks)

_____ km/h

(continued on the next page)

Turn over

23. continued.

**At 10 15 Sam stops for 10 minutes
and then drives for 20 minutes at a
speed of 75 km/h**

**(b) On the grid in the
Diagram Booklet, complete the
travel graph for Sam's journey.**

(3 marks)

**Answer space continues on the
next page.**

23. (b) continued.

(Total for Question 23 is 5 marks)

Turn over

24. (a) On the next page complete the table of values for

$$y = x^2 - 2x + 2$$

There are four spaces to fill.

(2 marks)

24. (a) continued.

x	y
-2	10
-1	
0	2
1	
2	
3	5
4	

(continued on the next page)

Turn over

24. continued.

**(b) Look at the diagram for
Question 24(b) in the
Diagram Booklet.**

It shows a grid.

**On the grid, draw the graph of
 $y = x^2 - 2x + 2$ for values of x
from -2 to 4**

(2 marks)

(continued on the next page)

24. continued.

**(c) Use your graph to find estimates
of the solutions of the equation
 $x^2 - 2x + 2 = 4$**

(2 marks)

(Total for Question 24 is 6 marks)

Turn over

25. Look at Diagram 1 and Diagram 2 for Question 25 in the Diagram Booklet.

Diagram 1 shows a right-angled triangle labelled shape **A with a base length of **10 mm** and a vertical height of **8 mm****

Diagram 2 is a shaded shape made from two shape **A triangles.**

Work out the perimeter of the shaded shape in Diagram 2

Give your answer correct to 3 significant figures.

(4 marks)

Answer space is on the next two pages.

Turn over

25. continued.

Turn over

25. continued.

_____ mm

(Total for Question 25 is 4 marks)

Turn over

26. Look at the diagram for Question 26(a) in the Diagram Booklet.

It shows a right-angled triangle, ABC

$$\text{AC} = 12 \text{ cm}$$

$$\text{Angle BAC} = 56^\circ$$

Angle ACB is a right angle.

(a) Work out the length of BC

**Give your answer correct to
1 decimal place.**

(2 marks)

**Answer space continues on the
next page.**

26. (a) continued.

_____ cm

(continued on the next page)

Turn over

26. continued.

Look at the diagram for Question 26(b) in the Diagram Booklet.

It shows a right-angled triangle, PQR

$PR = 18 \text{ cm}$

$RQ = 15 \text{ cm}$

Angle PQR is a right angle.

Angle PRQ is marked X

(b) Work out the size of the angle marked X

Give your answer correct to 1 decimal place.

(2 marks)

Answer space is on the next page.

Turn over

26. (b) continued.

○

(Total for Question 26 is 4 marks)

Turn over

27. Solve

$$x^2 - 7x - 18 = 0$$

(Total for Question 27 is 3 marks)

Turn over

28. In a sale, the normal price of a boat is reduced by 15%

**The sale price of the boat is
£272 000**

**Work out the normal price of the boat.
(2 marks)**

**Answer space continues on the next
page.**

28. continued.

£ _____

(Total for Question 28 is 2 marks)

TOTAL FOR PAPER IS 80 MARKS

END OF PAPER
