

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

Total Marks

Mathematics

Paper 2

(Calculator)

Foundation Tier

Thursday 4 June 2020 – Morning

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 Book

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 $3 \cdot 142$ unless the question instructs otherwise.

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 18

There may be spare copies of some diagrams.

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. Write 0.37 as a fraction.

(Total for Question 1 is 1 mark)

2. Write **29 381** correct to the nearest **1000**

(Total for Question 2 is 1 mark)

3. Simplify

$$3n - n + 4n$$

(Total for Question 3 is 1 mark)

4. Write $\frac{1}{4}$ as a percentage.

_____ %

(Total for Question 4 is 1 mark)

5. Here is a list of seven numbers.

3 4 9 18 27 30 36

**From the numbers in the list, write down a
cube number.**

(Total for Question 5 is 1 mark)

6. Liz is watching a film at the cinema.

The film started at **14 30**

The film is **105** minutes long.

When the film ends, Liz takes **20** minutes to get to the bus stop.

A bus leaves the bus stop at **16 45**

Does Liz get to the bus stop in time to get this bus?

You must show all your working.

(3 marks)

Answer space continues on the next page.

6. continued.

(Total for Question 6 is 3 marks)

7. Look at the table and the diagram for Question 7 in the Diagram Book.

Farhad, George and Tom each did a test.

Their marks for the test are shown in the table.

George drew the bar chart in the Diagram Book to show the marks they got.

The bar chart is NOT fully correct.

Write down TWO things that are wrong with George's bar chart.

(2 marks)

Answer lines continue on the next page.

1 _____

7. continued.

2 _____

(Total for Question 7 is 2 marks)

8. Look at the diagram for Question 8(a) in the Diagram Book.

It shows a straight line, **ABC**

Two angles are marked **x** and **150°**

- (a) (i) Work out the size of the angle marked **x**
(1 mark)



- (ii) Give a reason for your answer.
(1 mark)

(continued on the next page)

Turn over

8. continued.

Look at the diagram for Question 8(b) in the Diagram Book.

It shows a right angle and an angle marked 280°

The diagram is wrong.

(b) Explain why.

(1 mark)

(Total for Question 8 is 3 marks)

9. Look at the diagram for Question 9 in the Diagram Book.

It shows a scale which can be used to change between kilometres and miles.

- (a) Use the scale to change **40** kilometres to miles.
(1 mark)

_____ miles

(continued on the next page)

9. continued.

Here is an approximate rule to change from kilometres to miles.

Divide the distance in kilometres by 10 and then multiply by 6

**(b) Use this approximate rule to change
40 kilometres to miles.
(2 marks)**

_____ miles

(continued on the next page)

Turn over

9. continued.

**(c) Compare your answer to part (b) with your
answer to part (a)**

(1 mark)

(Total for Question 9 is 4 marks)

10. (a) Solve

$$3m = 36$$

(1 mark)

$$m = \underline{\hspace{2cm}}$$

(b) Solve

$$7 - x = 3$$

(1 mark)

$$x = \underline{\hspace{2cm}}$$

(Total for Question 10 is 2 marks)

Turn over

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

It shows a cuboid.

It has length 15 cm, width 10 cm and height 4 cm

Work out the volume of the cuboid.

(Total for Question 11 is 3 marks)

12. Lucy uses a code to open a lock.

The code is a letter followed by a 2–digit number.

The letter is L or U

The number is a prime number between 20 and 30

Write down all the possibilities for Lucy's code.

(Total for Question 12 is 2 marks)

Turn over

13. A machine fills bags with sweets.

There are 4275 sweets.

There are 28 sweets in each full bag.

The machine fills as many bags as possible.

How many sweets are left?

(3 marks)

Answer space continues on the next page.

13. continued.

(Total for Question 13 is 3 marks)

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

It is an incomplete pie chart.

The table below gives information about the number of goals scored by each of three teams.

Team	Number of goals
City	50
Rovers	45
United	25

Draw an accurate pie chart in the Diagram Book for this information.

(Total for Question 14 is 3 marks)

15. Given that

$$T = 3w + 4y$$

- (a) Work out the value of T when $w = 5$ and $y = -7$
(2 marks)

(continued on the next page)

15. continued.

Remember:

Given that

$$T = 3w + 4y$$

- (b) Work out the value of y when $T = 38$ and
 $w = 6$
(2 marks)

(Total for Question 15 is 4 marks)

Turn over

16. An exam has two papers, Paper 1 and Paper 2

Paper 1 has 60 marks.

Paper 2 has 90 marks.

The pass mark is $\frac{2}{3}$ of the total number of marks.

Danielle gets 70% of the marks for Paper 1

How many of the marks for Paper 2 must Danielle get in order to get the pass mark?

(4 marks)

Answer space continues on the next page.

16. continued.

(Total for Question 16 is 4 marks)

17. Look at the information for Question 17 in the Diagram Book.

Scott wants to make orange juice.

He is going to buy boxes of oranges.

Scott needs to buy enough oranges to make 8 litres of orange juice.

(a) Work out the number of boxes of oranges that Scott needs to buy.

You must show all your working.

(3 marks)

Answer space continues on the next page.

17. (a) continued.

(continued on the next page)

17. continued.

Scott also buys

1260 apples

280 bananas

(b) Write down the ratio of the number of apples that Scott buys to the number of bananas that he buys.

Give your ratio in its simplest form.

(2 marks)

(Total for Question 17 is 5 marks)

Turn over

18. Look at the diagram for Question 18 in the Diagram Book.

It shows triangle **A** and triangle **B** on a grid.

Describe fully the single transformation that maps triangle **A** onto triangle **B**

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

(Total for Question 18 is 2 marks)

19. Adam, Linda and Rytis share an amount of money.

Linda gets three times as much money as Rytis gets.

Linda gets half as much money as Adam gets.

What fraction of the amount of money does Linda get?

(Total for Question 19 is 2 marks)

Turn over

20. Pens and pencils are sold in a shop.

12 pencils cost £1.80

**The ratio of the cost of a pen to the cost of a pencil
is 7 : 3**

Work out the cost of 5 pens.

(4 marks)

Answer space continues on the next page.

20. continued.

£ _____

(Total for Question 20 is 4 marks)

- 21. (a) Write 84 as a product of its prime factors.
(2 marks)**

(continued on the next page)

21. continued.

- (b) Find the lowest common multiple (LCM) of
60 and 84
(2 marks)**

(Total for Question 21 is 4 marks)

Turn over

22. Look at the diagram for Question 22 in the Diagram Book.

It shows an incomplete Venn diagram.

$$\mathcal{E} = \{1, 2, 3, 4, 5, 6, 7, 8, 9, 10\}$$

$$A = \{\text{even numbers}\}$$

$$B = \{\text{factors of } 10\}$$

- (a) Complete the Venn diagram for this information.**
(3 marks)

(continued on the next page)

22. continued.

A number is chosen at random from the universal set, \mathcal{U}

- (b) Find the probability that this number is in the set $A \cap B$
(2 marks)

(Total for Question 22 is 5 marks)

- 23. Carlo puts tins into small boxes and into large boxes.**

He puts 6 tins into each small box.

He puts 20 tins into each large box.

Carlo puts a total of 3000 tins into the boxes so that

number of tins in small boxes : number of tins in large boxes = 2 : 3

Carlo says that less than 30% of the boxes filled with tins are large boxes.

Is Carlo correct?

You must show all your working.

(5 marks)

Answer space continues on the next two pages.

23. continued.

23. continued.

(Total for Question 23 is 5 marks)

24. (a) Complete the table of values below for

$$y = 5 - x^3$$

There are four spaces to fill.

(2 marks)

x	y
-2	
-1	6
0	
1	
2	

(continued on the next page)

Turn over

24. continued.

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

It shows a grid.

Draw the graph of

$y = 5 - x^3$ for values of x from -2 to 2

(2 marks)

(Total for Question 24 is 4 marks)

25. Look at the diagram for Question 25 in the Diagram Book.

It shows a right-angled triangle ABC

Angle ABC is a right angle.

Angle ACB = 34°

AB = x mm

AC = 178 mm

Work out the value of x

Give your answer correct to 1 decimal place.

(2 marks)

Answer space continues on the next page.

25. continued.

(Total for Question 25 is 2 marks)

26. $\mathbf{a} = \begin{pmatrix} 3 \\ 4 \end{pmatrix}$ $\mathbf{b} = \begin{pmatrix} 5 \\ -2 \end{pmatrix}$

Find $2\mathbf{a} - 3\mathbf{b}$ as a column vector.

$$\begin{pmatrix} \\ \\ \end{pmatrix}$$

(Total for Question 26 is 2 marks)

Turn over

27. Look at the diagram for Question 27 in the Diagram Book.

It shows a right-angled triangle and a quarter circle.

The right-angled triangle ABC has

angle $ABC = 90^\circ$

$AC = 9$ metres

$AB = 6$ metres

The quarter circle has centre C and radius CB

Angle $BCD = 90^\circ$

Work out the area of the quarter circle.

Give your answer correct to 3 significant figures.

You must show all your working.

(4 marks)

Answer space continues on the next two pages.

27. continued.

27. continued.

_____ m²

(Total for Question 27 is 4 marks)

28. Each exterior angle of a regular polygon is 15°

Work out the number of sides of the polygon.

(Total for Question 28 is 2 marks)

29. Write down the gradient of the line with equation
 $y = 2x + 3$

(Total for Question 29 is 1 mark)

TOTAL FOR PAPER IS 80 MARKS

END OF PAPER
