Paper Reference 4MA1/2FR
Pearson Edexcel
International GCSE

Mathematics A
PAPER 2FR
Foundation Tier
(Calculator)

Time: 2 hours plus your additional time allowance

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

Surname	
Other names	
Centre Number	
Candidate Number	

V68728A

Pearson

YOU MUST HAVE

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

YOU WILL BE GIVEN

Diagram Booklet
Formulae Pages

INSTRUCTIONS

Answer ALL questions.

Without sufficient working, correct answers may be awarded no marks.

Answer the questions in the spaces provided in this Question Paper or on the separate diagrams – there may be more space than you need.

CALCULATORS MAY BE USED.

You must NOT write anything on the Formulae Pages. Anything you write on the Formulae Pages will gain NO credit.

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.

You may be provided with models for Question 3(a), Question 3(b) and Question 13

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

ADVICE

Read each question carefully before you start to answer it.

Check your answers if you have time at the end.

Answer ALL TWENTY SIX questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

1. **Look at the table for Question 1 in the Diagram Booklet.**

It gives the total area of forest in each of six countries.

(a) **Which of these six countries has the least total area of forest?**

(1 mark)

_____

(continued on the next page)

1.   continued.

(b)   Write down the value of the **4** in

92 410

(1 mark)

_____

(continued on the next page)

1. continued.

Two of the six countries each have a total area of forest of **5000 km^2** when rounded to the nearest thousand.

(c) Write down the name of the two countries.

(1 mark)

_____

and _____

(continued on the next page)

1. continued.

(d) Write the number

3371 in words.

(1 mark)

_____

_____

(Total for Question 1 is 4 marks)

Turn over

2. Look at the diagram for Question 2 in the Diagram Booklet.

    It shows three points, **A**, **B** and **C**, on a grid.

(continued on the next page)

2. **continued.**

(a) **Write down the coordinates of**

(i) **point A**

(_____ , _____)

(ii) **point B**

(2 marks)

(_____ , _____)

(continued on the next page)

2. **continued.**

D **is the point such that ABCD is a rhombus.**

(b) **On the grid in the Diagram Booklet, mark the point D**

Label this point D

(1 mark)

(continued on the next page)

2. **continued.**

(c) **Find the coordinates of the midpoint of AB**

(2 marks)

(_____ , _____)

(Total for Question 2 is 5 marks)

3. (a) Look at the diagram for Question 3(a) in the Diagram Booklet.

You may be provided with a model.

They show a **3−D** shape.

Write down the mathematical name of this **3−D** shape.

(1 mark)

_____

Turn over

3. continued.

Look at the diagram for Question 3(b) in the Diagram Booklet.

You may be provided with a model.

They show a solid prism.

(b) How many edges has the prism?

(1 mark)

_____

(Total for Question 3 is 2 marks)

4. Below are the salaries, in thousands of dollars, of seven people.

21   28   29   32

34   34   39

(a) Find the mode of the salaries.

(1 mark)

_____

thousand dollars

(continued on the next page)

4. continued.

Remember:

Below are the salaries, in thousands of dollars, of seven people.

21   28   29   32

34   34   39

(b) Find the range of the salaries.

(1 mark)

_____

thousand dollars

(Total for Question 4 is 2 marks)

5.　(a)　**Work out**

$$\frac{4}{5} \text{ of } 80$$

(1 mark)

_____

(continued on the next page)

5.   continued.

(b) Write

$$\frac{9}{20}$$ as a decimal.

(1 mark)

_____

(continued on the next page)

Turn over

5. **continued.**

Below are four fractions.

$$\frac{1}{3} \qquad \frac{2}{9} \qquad \frac{3}{8} \qquad \frac{4}{11}$$

When written as a decimal, ONE of these fractions will give a terminating decimal.

(c) Write down the fraction.

(1 mark)

5.　continued.

　(d)　Write

　　　$\dfrac{11}{4}$ as a mixed number in its

　　　simplest form.

　　　(1 mark)

_____

(continued on the next page)

5. continued.

Below is a list of four words that can be used to describe numbers.

cube

square

prime

negative

(e) Use the word from the list to complete the sentence below correctly.

(1 mark)

25 is a _____ number

(Total for Question 5 is 5 marks)

6. Look at Diagram 1 and Diagram 2 for Question 6 in the Diagram Booklet. They are NOT accurately drawn.

Diagram 1 shows a square.

The perimeter of the square is **24 cm**

Diagram 2 is a shaded rectangle made from **4** of the squares in Diagram 1

Work out the perimeter of the shaded rectangle in Diagram 2

(3 marks)

Answer space is on the next two pages.

Turn over

6. **continued.**

6. **continued.**

_____ **cm**

(Total for Question 6 is 3 marks)

7. (a) Write the ratio $42 : 96$ in its simplest form.

(2 marks)

_____

(continued on the next page)

7.   continued.

There are only apples and pears in a fruit basket so that

the number of apples : the number of pears = 4 : 11

(b)   What fraction of the fruit in the basket is pears?

(1 mark)

_____

(Total for Question 7 is 3 marks)

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

Danielle is going to print some business cards.

She uses the rule in the Diagram Booklet to work out the total cost, in euros, of printing the business cards.

Danielle is going to print **350** business cards.

Work out the total cost of printing the business cards.

(3 marks)

Answer space is on the next page.

Turn over

8. **continued.**

_____ **euros**

(Total for Question 8 is 3 marks)

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

   It is NOT accurately drawn.

   It shows a quadrilateral **ABCD**

   angle **ABC** = **44°**

   angle **CDA** = **92°**

   angle **DAB** = angle **DCB** = $x°$

   (i) Work out the value of **X**

   (3 marks)

   Answer space continues on the next page.

9. (i) continued.

x = _____

(continued on the next page)

9.   continued.

   (ii) Give a reason for your answer.

       (1 mark)

_____

_____

(Total for Question 9 is 4 marks)

Turn over

10. Thabisa is organising a trip to the theatre.

    The cost of a ticket for each adult is £11·75

    The total cost of the tickets for 12 adults and 5 children is £181

    Work out the cost of a ticket for each child.

    (3 marks)

    Answer space continues on the next page.

10. **continued.**

£_____

(Total for Question 10 is 3 marks)

Turn over

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

At school each week, Gabriella has to play a sport on Monday and a sport on Thursday.

The table in the Diagram Booklet shows the sports from which she can choose on Monday and the sports from which she can choose on Thursday.

11. **continued.**

Write down all the possible combinations of these sports that Gabriella can play in one week.

_____

_____

_____

_____

_____

(Total for Question 11 is 2 marks)

Turn over

12. **Maria is going to make some flapjacks.**

Below are four of the ingredients that she will use.

175 grams butter

175 grams syrup

175 grams sugar

330 grams oats

What percentage of these four ingredients is oats?

Give your answer correct to 3 significant figures.

(3 marks)

Answer space is on the next page.

12.   continued.

_____**%**

(Total for Question 12 is 3 marks)

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

You may be provided with a model.

They are NOT accurate.

They show a solid wooden cuboid.

The cuboid measures **65 cm** by **35 cm** by **45 cm**

A machine cuts the cuboid to make cubes.

Each cube has edges of length **5 cm**

13. continued.

Work out the maximum number of cubes that can be made from the cuboid.

(3 marks)

Answer space continues on the next two pages.

13. continued.

13. **continued.**

(Total for Question 13 is 3 marks)

14. Anjali, Ravina and Sandeep were the three candidates in an election.

Heidi draws a pie chart for the number of votes received by each of the three candidates.

The angle in the pie chart for the number of votes received by Anjali is **90°**

The angle in the pie chart for the number of votes received by Ravina is **160°**

Ravina received **400** votes.

(continued on the next page)

14. continued.

Work out the number of votes Sandeep received.

(3 marks)

Answer space continues on the next page.

14. continued.

(Total for Question 14 is 3 marks)

15. **(a)** **Solve**

5p = 15

(1 mark)

p = _____

(b) **Expand**

x(8 − x)

(1 mark)

_____

(continued on the next page)

15. continued.

Given that

T = 5m − 6n

(c) work out the value of T when

m = 4·2 and n = −2·5

(2 marks)

T = _____

Turn over

15. continued.

(d) Make **r** the subject of

k = 2r + t

(2 marks)

_____

(Total for Question 15 is 6 marks)

Turn over

16. (a) Show that

$$\frac{3}{8} \div \frac{27}{32} = \frac{4}{9}$$

(2 marks)

Turn over

16. continued.

(b) Show that

$$\frac{5}{6} - \frac{3}{8} = \frac{11}{24}$$

(2 marks)

(Total for Question 16 is 4 marks)

17. Look at the accurate scale drawing for Question 17 in the Diagram Booklet.

It shows the position of a college **C** and a train station **S**

(a) Find the bearing of **S** from **C**
(1 mark)

_____ °

(continued on the next page)

17. **continued.**

For Charles,

1 step = 0·44 metres

(b)   Work out the number of steps Charles walks as he goes in a straight line from the college to the train station.

Give your answer correct to the nearest whole number of steps.

(4 marks)

Answer space continues on the next page.

17. (b) continued.

_____

(Total for Question 17 is 5 marks)

Turn over

18. Look at the table for Question 18 in the Diagram Booklet.

A tin contains tea bags with a choice of four different flavours of tea.

The four flavours of tea are Assam or Darjeeling or Nilgiri or Rize.

Sara takes at random a tea bag from the tin.

The table in the Diagram Booklet shows each of the probabilities that the flavour of the tea Sara takes is Assam or Darjeeling or Rize.

(continued on the next page)

Turn over

18. continued.

(a) **Work out the probability that the flavour of the tea Sara takes is Nilgiri.**

(2 marks)

_____

(continued on the next page)

18. continued.

(b) **Work out the probability that the flavour of the tea Sara takes is either Darjeeling or Rize.**

(2 marks)

_____

(Total for Question 18 is 4 marks)

Turn over

19. Mary saves for a holiday each year.

In **2020** she saved a total of **$720**

In **2021**, each month she saved **$78**

The total amount Mary saved in **2021** was **P%** more than the total she saved in **2020**

(a) Work out the value of **P**

(4 marks)

Answer space continues on the next two pages.

19. (a) continued.

19. (a) continued.

_____

(continued on the next page)

19. **continued.**

Look at the information for

Question 19(b) in the

Diagram Booklet.

Roberto is going to go on holiday.

(b) **Which of the two coupons shown**

in the information in the

Diagram Booklet, A or B, should

he use?

Show your working clearly.

(3 marks)

Answer space continues on the

next two pages.

19. (b) continued.

19. (b) continued.

(Total for Question 19 is 7 marks)

Turn over

20. **(a)** Solve

$$4y + 5 > 12$$

(2 marks)

_____

(continued on the next page)

20. continued.

(b) Solve

$$6x - 5 = \frac{4x - 7}{2}$$

Show clear algebraic working.

(3 marks)

Answer space continues on the next page.

20. (b) continued.

X = _____

(Total for Question 20 is 5 marks)

Turn over

21. Look at the diagram for Question 21 in the Diagram Booklet.

It is NOT accurately drawn.

It shows a regular octagon **ABCDEFGH** and a regular pentagon **ABIJK**

The regular octagon and the regular pentagon have a common side **AB**, such that the pentagon is inside the octagon.

The angle **BIC** is marked **x**

Work out the size of the angle **x**

(4 marks)

Answer space is on the next two pages.

Turn over

21. **continued.**

21. **continued.**

°
_____

(Total for Question 21 is 4 marks)

Turn over

22. Shane invests **7200** dollars for **3** years in a savings account.

He gets **2·5%** per year compound interest.

How much money will Shane have in his savings account at the end of **3** years?

Give your answer to the nearest dollar.

(3 marks)

Answer space continues on the next two pages.

22. continued.

22. continued.

_____ **dollars**

(Total for Question 22 is 3 marks)

23. **(a)** **Write down the value of**

$$x^0$$

(1 mark)

_____

(continued on the next page)

23. **continued.**

Given that

$$2^{-3} \times 2^9 = 2^n$$

(b) **find the value of n**

(1 mark)

n = _____

(continued on the next page)

23. continued.

Given that

$$\frac{7^{206} \times 7^{m}}{7^{214}} = 7^{-3}$$

(c) find the value of **m**

(2 marks)

Answer space continues on the next page.

Turn over

23. (c) continued.

m = _____

(Total for Question 23 is 4 marks)

Turn over

24. (a) Write down an equation of the straight line with gradient -3 and which passes through the point with coordinates $(0, 5)$

(2 marks)

_____

Turn over

24. continued.

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

   It shows a blank grid.

   On the grid, mark the region defined by ALL THREE of the inequalities below.

   $$x \leq 6$$
   $$y \geq 2$$
   $$y \leq x + 1$$

   Label the region R

   (3 marks)

(Total for Question 24 is 5 marks)

25. Look at the table for Question 25 in the Diagram Booklet.

A scientist is investigating the weight of **50** tigers.

The table in the Diagram Booklet shows some information about these tigers.

The mean weight of all **50** tigers is **218 kg**

Work out the mean weight of the Bengal tigers.

(3 marks)

Answer space is on the next two pages.

Turn over

25. continued.

25. continued.

_____ **kg**

(Total for Question 25 is 3 marks)

26. Look at the diagram for Question 26 in the Diagram Booklet.

It is NOT accurately drawn.

In the diagram, **ABC** is a right–angled triangle and **DEF** is a semicircular arc which is on the side **AC**

In triangle **ABC**

BC = 24 cm

angle **ABC = 90°**

angle **BCA = 30°**

(continued on the next page)

26. **continued.**

The points **D** and **F** lie on **AC** so that **DF** is the diameter of the semicircular arc **DEF**

The radius of the semicircular arc is **3 cm**

Work out the length of **AFEDC**

Give your answer correct to **2** significant figures.

(5 marks)

Answer space continues on the next four pages.

26. continued.

26. continued.

26. continued.

26. continued.

_____ **cm**

(Total for Question 26 is 5 marks)

TOTAL FOR PAPER IS 100 MARKS

END OF PAPER