

Paper Reference 4MA1/2FR
Pearson Edexcel
International GCSE

Total Marks

Mathematics A
PAPER 2FR
Foundation Tier
(Calculator)

Time: 2 hours

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
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.**

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

**You may be provided with models for Question 24
They are NOT accurate.**

You may be provided with a shape for Question 16(b)

ADVICE

Read each question carefully before you start to answer it.

Check your answers if you have time at the end.

Answer ALL TWENTY FIVE questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

1. (a) Write the five numbers below in order of size.
Start with the smallest number.

171 490 84 105 233

(1 mark)

- (b) Write in figures the number
five thousand, one hundred and two.
(1 mark)

(continued on the next page)

1. continued.

(c) Write down the value of the **3** in the number

7439

(1 mark)

(d) Write the number **651** correct to the nearest

hundred.

(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 a bar chart.

The bar chart shows information about the weight of steel, in millions of tonnes, exported by each of five countries in 2019

Using the information in the bar chart,

- (a) write down the weight of steel exported by Germany,**
(1 mark)

_____ million tonnes

- (b) write down the country that exported 90 million tonnes of steel,**
(1 mark)

(continued on the next page)

Turn over

2. continued.

- (c) work out the difference between the weight of steel exported by Japan and the weight of steel exported by Saudi Arabia.**

(1 mark)

_____ million tonnes

Italy exported 25 million tonnes of steel in 2019

- (d) Draw a bar on the bar chart to show this information.**

(1 mark)

(Total for Question 2 is 4 marks)

3. (a) Write down the mathematical name for an 8-sided polygon.

(1 mark)

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

It shows an angle.

What type of angle is the angle marked X?

(1 mark)

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

It shows a circle.

On the diagram, draw a chord of the circle.

(1 mark)

(continued on the next page)

Turn over

3. continued.

(d) Change 3·6 metres into centimetres.

(1 mark)

_____ cm

(Total for Question 3 is 4 marks)

4. Look at the diagram for Question 4 in the Diagram Booklet.

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

- (a) Write down the coordinates of the point **A**
(1 mark)

(_____ , _____)

The coordinates of the point **D** are **(2, -2)**

- (b) On the grid, mark the position of **D**
Label this point **D**
(1 mark)

(continued on the next page)

4. continued.

(c) Find the coordinates of the midpoint of **BC**
(2 marks)

(_____ , _____)

(d) Write down the equation of the line **EF**
(1 mark)

(Total for Question 4 is 5 marks)

5. Pat has 4 parcels **A**, **B**, **C** and **D**

The weight of parcel **A** is **400** grams.

The weight of parcel **B** is **350** grams more than the weight of parcel **A**

The weight of parcel **C** is twice the weight of parcel **A**

The total weight of the 4 parcels is **2.5** kilograms.

Work out the weight, in grams, of parcel **D**
(4 marks)

Answer space continues on the next page.

5. continued.

_____ grams

(Total for Question 5 is 4 marks)

Turn over

6. Below are the first five terms of a number sequence.

4 10 16 22 28

(a) (i) Write down the next term of the sequence.

(1 mark)

(ii) Explain how you worked out your answer.

(1 mark)

(continued on the next page)

6. continued.

Remember:

The first five terms of the number sequence are

4 10 16 22 28

(b) Work out the 13th term of the sequence.
(1 mark)

(continued on the next page)

Turn over

6. continued.

Remember:

The first five terms of the number sequence are

4 10 16 22 28

(c) Explain why **467** cannot be a number in the sequence.

(1 mark)

(Total for Question 6 is 4 marks)

Turn over

7. In a field, there are **60** sheep and **24** cows.

(a) Find the ratio of the number of sheep to the number of cows.

Give your ratio in its simplest form.

(2 marks)

(continued on the next page)

7. continued.

In a barn, there are only white ducks and brown ducks.

In the barn, the ratio

number of white ducks : number of brown ducks = 3 : 7

(b) What fraction of the ducks in the barn are white?

(1 mark)

(continued on the next page)

7. continued.

Giles and Sarah share some bales of hay in the ratio 11 : 4

Sarah receives 20 bales of hay.

(c) Work out how many bales of hay are shared in total.

(3 marks)

Answer space continues on the next page.

7. (c) continued.

(Total for Question 7 is 6 marks)

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

It shows two lists of events, List **A** and List **B**
Linford is going to take part in an athletics competition.

He can choose one event from List **A** and one event from List **B**

Write down all the possible combinations Linford can choose.

(Total for Question 8 is 2 marks)

9. (a) Write the time 8 30 pm using the 24-hour clock.
(1 mark)
-

(continued on the next page)

9. continued.

Ella started watching television at 10 50 am

Ella watched

a comedy programme lasting 45 minutes

a sports programme lasting 1 hour 10 minutes

a history programme

There were no breaks and no advertisements
between the programmes.

Ella finished watching television at 2 20 pm

(b) How long did the history programme last?

Give your answer in minutes.

(3 marks)

Answer space continues on the next page.

9. (b) continued.

_____ minutes

(Total for Question 9 is 4 marks)

Turn over

10. Hermann changed **£500** into euros.

The exchange rate was

£1 = 1.18 euros.

(a) Work out how much money, in euros, Hermann received.

(2 marks)

_____ euros

(continued on the next page)

Turn over

10. continued.

Anita changed \$350 into pounds (£)

The exchange rate was

£1 = \$1.40

**(b) Work out how much money, in pounds (£),
Anita received.**

(2 marks)

Answer space continues on the next page.

10. (b) continued.

£ _____

(Total for Question 10 is 4 marks)

11. Asif has 200 beads.

Asif gives $\frac{1}{4}$ of the 200 beads to Bernadette.

Asif gives $\frac{2}{5}$ of the 200 beads to Claudio.

Asif gives 43 beads to Derek.

What fraction of the 200 beads does Asif have left?

(4 marks)

Answer space continues on the next page.

11. continued.

(Total for Question 11 is 4 marks)

12. Look at the diagram for Question 12 in the Diagram Booklet.

It shows an incomplete Venn diagram.

**30 children were asked whether they have a cat (C)
or a dog (D)**

Of the 30 children

5 have both a cat and a dog

13 have a dog

11 have ONLY a cat

(a) Complete the Venn diagram in the Diagram Booklet.

(3 marks)

(continued on the next page)

12. continued.

One of the children is picked at random.

(b) Find the probability that this child

(i) has a dog,

(1 mark)

(ii) does not have a dog and does not have a cat.

(1 mark)

(Total for Question 12 is 5 marks)

Turn over

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

It is NOT accurately drawn.

It shows the plan of a floor.

Indira is going to paint the floor.

She needs to buy enough tins of paint to cover the floor with one coat of paint.

Each tin of paint covers an area of 7 m^2

Each tin of paint costs £23·90

Indira buys the least possible number of tins of paint.

Work out the total cost of the tins of paint that Indira buys.

Show your working clearly.

(5 marks)

Answer space continues on the next page.

13. continued.

£ _____

(Total for Question 13 is 5 marks)

Turn over

14. (a) Expand
 $x(10 - x)$
(1 mark)
-

- (b) Factorise
 $6y + 27$
(1 mark)
-

(continued on the next page)

14. continued.

(c) Make **m** the subject of the formula

$$h = \frac{m}{2} + 4$$

(2 marks)

(continued on the next page)

14. continued.

(d) Solve

$$7g + 3 = 2g - 5$$

Show clear algebraic working.

(3 marks)

Answer space continues on the next page.

14. (d) continued.

$g =$ _____

(Total for Question 14 is 7 marks)

15. Show that

$$4\frac{2}{3} \div 1\frac{5}{6} = 2\frac{6}{11}$$

(3 marks)

Answer space continues on the next page.

15. continued.

(Total for Question 15 is 3 marks)

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

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

- (a) Describe fully the single transformation that maps triangle **A** onto triangle **B**
(2 marks)

- (b) On the grid in the Diagram Booklet,

translate triangle **A** by the vector $\begin{pmatrix} -7 \\ 3 \end{pmatrix}$

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

Label the new triangle **C**

(1 mark)

(Total for Question 16 is 3 marks)

Turn over

17. $-8 < 2y \leq 2$

y is an integer.

- (a) Find all the possible values of y
(2 marks)

(continued on the next page)

17. continued.

**(b) Look at the diagram for Question 17(b) in the
Diagram Booklet.**

It shows a number line.

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

(1 mark)

(Total for Question 17 is 3 marks)

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

It shows angle BAC

Using ruler and compasses only, construct the bisector of angle BAC in the Diagram Booklet.

You must show all your construction lines.

(Total for Question 18 is 2 marks)

19. Look at the diagram for Question 19 in the Diagram Booklet.

It shows a grid.

On the grid, draw the graph of

$5x + 2y = 10$ for values of x from -2 to 4

(Total for Question 19 is 3 marks)

Turn over

20. In a bag, there are only red counters, blue counters, green counters and yellow counters.

The total number of counters in the bag is 80

In the bag

the number of red counters is $x + 7$

the number of blue counters is $x - 11$

the number of green counters is $3x$

Jude takes at random a counter from the bag.

The probability that he takes a red counter is $\frac{1}{4}$

Work out the probability that Jude takes a yellow counter.

(4 marks)

Answer space continues on the next two pages.

20. continued.

20. continued.

(Total for Question 20 is 4 marks)

21. (a) Find the highest common factor (HCF) of
200 and 420
(2 marks)

(continued on the next page)

21. continued.

$$A = 2^3 \times 3 \times 5 \times 7^2$$

$$B = 2 \times 3^2 \times 7$$

$$C = 3 \times 5^2 \times 11$$

(b) Find the lowest common multiple (LCM) of
A, B and C

Write your answer as a product of powers of
prime factors.

(2 marks)

Answer space continues on the next page.

21. (b) continued.

(Total for Question 21 is 4 marks)

52

22. 60 students sat a Mathematics exam.

The mean mark for the 32 students in Class A was 55

The mean mark for the 28 students in Class B was 52

Find the mean mark for all 60 students.

(3 marks)

Answer space continues on the next page.

Turn over

22. continued.

(Total for Question 22 is 3 marks)

Turn over

23. Teresa invests \$2000 for 3 years in a savings account.

She gets 4% each year compound interest.

(a) How much money will Teresa have in her savings account at the end of 3 years?

Give your answer correct to the nearest dollar.

(3 marks)

Answer space continues on the next page.

23. (a) continued.

\$_____

Sam invested \$T

The value of his investment decreased by 9% each year.

At the end of the first year, the value of Sam's investment was \$1365

(b) Work out the value of T

(3 marks)

Answer space continues on the next page.

23. (b) continued.

(Total for Question 23 is 6 marks)

24. Look at the diagrams for Question 24 in the Diagram Booklet.

You may be provided with two models.

They are NOT accurate.

The diagrams and the models show two solids, **A and **B****

Solids **A and **B** are made from two different metals.**

Solid **A is in the shape of a cylinder with radius **3 cm** and height **7 cm****

Solid **A has a mass of **2000 grams****

Solid **B is a different shape and has a mass of **3375 grams****

Solid **B has a volume of **450 cm³****

All of the metal from Solid **A and Solid **B** is melted down to make a uniform Solid **C****

(continued on the next page)

24. continued.

Given that there is no change to mass or volume during this process

work out the density of Solid C

Give your answer correct to one decimal place.

(3 marks)

Answer space continues on the next page.

24. continued.

_____ g/cm³

(Total for Question 24 is 3 marks)

Turn over

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

It is NOT accurately drawn.

It shows AB, BC, CD, DE and EF, five sides of a regular polygon.

RST, SCU and BCV are straight lines.

RST is parallel to CD

Angle RSC = 128°

Angle UCV = 32°

Work out how many sides the polygon has.

Show your working clearly.

(4 marks)

Answer space continues on the next page.

25. continued.

(Total for Question 25 is 4 marks)

TOTAL FOR PAPER IS 100 MARKS

END OF PAPER
