

Paper Reference 4MA1/1F
Pearson Edexcel
International GCSE

Total Marks

Mathematics A
PAPER 1F
Foundation Tier
(Calculator)

Wednesday 8 November 2023 – Morning

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.

You may be provided with a model for Question 3(d)
It is **NOT** accurate.

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 FOUR questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

1. Here is a list of six numbers.

9 11 25 27 33 40

(a) From the numbers in the list, write down

(i) an even number
(1 mark)

(ii) a cube number
(1 mark)

(continued on the next page)

1. continued.

Here are the temperatures, in $^{\circ}\text{C}$, in Paris at midnight for one week.

-3 -7 -2 -6 -9 -1 -5

(b) Write down the lowest temperature.

(1 mark)

_____ $^{\circ}\text{C}$

(c) Find the square root of 441

(1 mark)

(continued on the next page)

1. continued.

Hassan says,

“the sum of two prime numbers is always even”

(d) Give an example to show that Hassan is
NOT correct.

(1 mark)

(Total for Question 1 is 5 marks)

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

It is a bar chart showing information about the number of international students who studied in each of five countries in 2019

By using the figures shown in the bar chart, answer the following questions.

(a) In which of these five countries did the greatest number of international students study?

(1 mark)

(b) Write down the number of international students who studied in Australia.

(1 mark)

_____ thousand

(continued on the next page)

2. continued.

The number of international students who studied in Japan was more than the number of international students who studied in Spain.

(c) How many more?

(1 mark)

_____ **thousand**

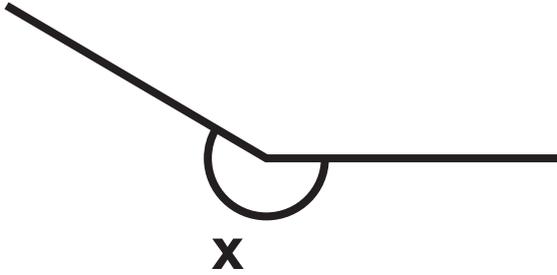
In 2019, the number of international students who studied in France was 350 thousand.

(d) Draw a bar on the bar chart in the Diagram Booklet to show this information.

(1 mark)

(Total for Question 2 is 4 marks)

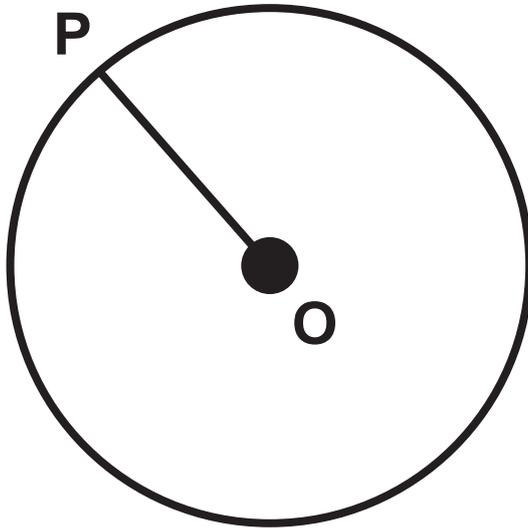
3. (a) Write down the mathematical name of the angle marked X below.
(1 mark)



(continued on the next page)

3. continued.

(b) **P** is a point on a circle with centre **O**



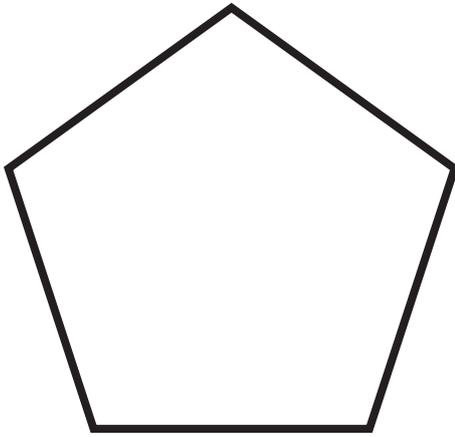
Write down the mathematical name of the
line **OP**

(1 mark)

(continued on the next page)

3. continued.

(c) Here is a polygon.



Write down the mathematical name of this polygon.

(1 mark)

(continued on the next page)

3. continued.

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

You may be provided with a model.

They show a solid prism.

Write down the number of edges of the solid prism.

(1 mark)

(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**, marked on a grid.

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

(_____ , _____)

- (b) Write down the coordinates of point **B**
(1 mark)

(_____ , _____)

M is the midpoint of the line **AC**

- (c) On the grid in the Diagram Booklet, mark the point **M**
Label the point **M**
(1 mark)

(continued on the next page)

4. continued.

The point **D** is such that the shape **ABCD** is a kite.

(d) On the grid in the Diagram Booklet, mark
point **D** (**6, -1**)

Label the point **D**

(1 mark)

(e) How many lines of symmetry has kite **ABCD**?

(1 mark)

(Total for Question 4 is 5 marks)

5. Look at the diagram for Question 5(a) in the Diagram Booklet.

It shows a shape made of squares.

- (a) Shade $\frac{2}{3}$ of the shape.

(1 mark)

- (b) Write $\frac{3}{10}$ as a percentage.

(1 mark)

_____ %

- (c) Write $\frac{48}{150}$ as a fraction in its simplest form.

(1 mark)

(continued on the next page)

5. continued.

(d) Write $\frac{46}{7}$ as a mixed number.

(1 mark)

(Total for Question 5 is 4 marks)

6. Akbar goes to a restaurant with his friends.
They have a total of **1000** dirhams to spend on food.

They order

2 dishes of chicken makhani at **145·50** dirhams each

3 dishes of vegetable korma at **110** dirhams each
some naans at **30** dirhams each

They order as many naans as they can.

They pay with a **1000** dirham note.

Work out how much change they should receive.

(4 marks)

Answer space continues on the next two pages.

6. continued.

6. continued.

_____ dirhams

(Total for Question 6 is 4 marks)

7. (a) Simplify
 $9r \times 5w$
(1 mark)
-

- (b) Simplify
 $7p + 5n - 9p + 3n$
(2 marks)
-

(continued on the next page)

7. continued.

$$T = 8x - 6u$$

(c) Work out the value of T when $x = 9$ and $u = 5$
(2 marks)

$$T = \underline{\hspace{10em}}$$

(continued on the next page)

7. continued.

(d) Solve

$$5m - 6 = 17$$

(2 marks)

$m =$ _____

(Total for Question 7 is 7 marks)

8. There are four teams in a cricket competition.

The teams are

Australia (A)

England (E)

Pakistan (P)

West Indies (W)

Each team will play every other team once.

Write down all the matches that will take place.

(Total for Question 8 is 2 marks)

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

It is NOT accurately drawn.

It shows two triangles **ABE** and **ECD**

Triangle **ABE** is isosceles with **AE = EB**

AED and **EBC** are straight lines.

Angle **CDE** = 42°

The reflex angle **ECD** = 296°

Angle **BAE** = x°

Work out the value of **x**

(4 marks)

Answer space continues on the next page.

9. continued.

x = _____

(Total for Question 9 is 4 marks)

10. Look at the table for Question 10 in the Diagram Booklet.

It is a table giving information about the number of rewards gained by each of 50 students last term.

**(a) Write down the mode of the number of rewards.
(1 mark)**

(continued on the next page)

10. continued.

- (b) Work out the mean number of rewards.
(3 marks)



(continued on the next page)

10. continued.

One of these students is chosen at random.

(c) Find the probability that this student gained more than 2 rewards.

(2 marks)

(Total for Question 10 is 6 marks)

11. A rental company has **360** cars and some vans.

The ratio of the number of cars to the number of vans is **3 : 5**

$\frac{4}{9}$ of the cars are electric.

36% of the vans are electric.

The company has more electric vans than electric cars.

Work out how many more.

Show your working clearly.

(5 marks)

Answer space continues on the next two pages.

11. continued.

11. continued.

(Total for Question 11 is 5 marks)

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

It is a grid.

On the grid, draw the graph of

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

(Total for Question 12 is 3 marks)

13. A wheel on a tractor has a diameter of 160 cm

The tractor travels 1750 metres.

Work out the number of complete turns made by the wheel.

Show your working clearly.

(4 marks)

Answer space continues on the next page.

13. continued.

(Total for Question 13 is 4 marks)

Turn over

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

It is an accurate scale drawing showing the positions of a hotel and a museum.

On the diagram, 1 cm represents 4.5 km.

(a) Find, by measuring, the bearing of the hotel from the museum.

(1 mark)



(continued on the next page)

14. continued.

(b) Work out the real distance between the hotel and the museum.

(2 marks)

_____ km

(Total for Question 14 is 3 marks)

15. Look at the diagram for Question 15 in the Diagram Booklet.

It is a Venn diagram.

List the members of the set

(a) A

(1 mark)

(b) $A \cap B$

(1 mark)

(continued on the next page)

15. continued.

List the members of the set

(c) $(A \cup B)'$

(1 mark)

(Total for Question 15 is 3 marks)

16. (a) Factorise fully
 $12pq - 18p$
(2 marks)
-

(continued on the next page)

16. continued.

There are **56** metal bars in a box.

Each metal bar is gold or silver or zinc.

y metal bars are gold.

$(3y + 7)$ metal bars are silver.

$(2y - 5)$ metal bars are zinc.

(b) Work out the number of metal bars that are zinc.

Show clear algebraic working.

(4 marks)

Answer space continues on the next page.

16. (b) continued.

(Total for Question 16 is 6 marks)

17. Joshua buys a car for \$12 500

He sells the car to Nina.

Nina pays

- **a deposit of \$1500**
- **followed by 36 monthly payments of \$450**

Work out Joshua's percentage profit.

(4 marks)

Answer space continues on the next page.

17. continued.

_____ %

(Total for Question 17 is 4 marks)

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

A biased spinner has three sections each of a different colour.

The table in the Diagram Booklet shows the probability that, when the spinner is spun once, it will land on blue or on orange or on white.

(a) Work out the value of X
(2 marks)

Answer space continues on the next page.

18. (a) continued.

x = _____

(continued on the next page)

18. continued.

The spinner is spun **250** times.

(b) Work out an estimate for the number of times the spinner will land on blue.

(2 marks)

(Total for Question 18 is 4 marks)

Turn over

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

It is NOT accurately drawn.

It shows a shaded shape made from three identical semicircles, **X**, **Y** and **Z**

ABCDE is a straight line.

AC is the diameter of semicircle **X** and **B** is the centre of semicircle **X**

BD is the diameter of semicircle **Y** and **C** is the centre of semicircle **Y**

CE is the diameter of semicircle **Z** and **D** is the centre of semicircle **Z**

AC = BD = CE = 20 cm

Work out the perimeter of the shaded shape.

Give your answer correct to the nearest whole number.

(3 marks)

Answer space is on the next page.

19. continued.

_____ cm

(Total for Question 19 is 3 marks)

Turn over

20. Look at the information for Question 20 in the Diagram Booklet.

Juan wants to buy a ticket to fly from Madrid to Berlin.

Using the information in the Diagram Booklet, work out the difference between the normal price of ticket **A and the normal price of ticket **B****

(4 marks)

Answer space continues on the next page.

20. continued.

_____ euros

(Total for Question 20 is 4 marks)

21. $A = 5^3 \times 7^3 \times 11^6$ and
 $B = 5^6 \times 7^2 \times 11^4$

Find the highest common factor (HCF) of **A** and **B**
Give your answer as a product of powers of its
prime factors.

(2 marks)

Answer space continues on the next page.

21. continued.

(Total for Question 21 is 2 marks)

22. (a) Solve the inequality

$$8x - 4 \geq 3x - 10$$

(2 marks)



(continued on the next page)

22. continued.

Look at the diagram for Question 22(b) in the Diagram Booklet.

The region **R**, shown shaded in the diagram, is bounded by three straight lines.

- (b) Write down the three inequalities that define the region **R**
(3 marks)

(Total for Question 22 is 5 marks)

Turn over

23. (a) Write

5.87×10^{-4} as an ordinary number.

(1 mark)

(b) Write

84 000 000 in standard form.

(1 mark)

(continued on the next page)

23. continued.

The number of neurons in a human brain is

$$8.5 \times 10^{10}$$

The number of neurons in a monkey brain is

$$1.47 \times 10^9$$

The number of neurons in a human brain is

$K \times$ the number of neurons in a monkey brain.

(c) Work out the value of K

Give your answer correct to one decimal place.

(2 marks)

Answer space continues on the next page.

23. (c) continued.

K = _____

(Total for Question 23 is 4 marks)

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

It is NOT accurately drawn.

It shows triangle **ABC**

ADB is a straight line.

AB = 22 metres

CD = 8 metres

Angle CAB = 40°

Angle CDB is a right angle.

Angle CBA = x°

Work out the value of x

Give your answer correct to one decimal place.

Show your working clearly.

(5 marks)

Answer space continues on the next page.

24. continued.

X = _____

(Total for Question 24 is 5 marks)

TOTAL FOR PAPER IS 100 MARKS

END OF PAPER
