

Paper Reference 4MA1/1F
Pearson Edexcel
International GCSE
Mathematics A
PAPER 1F
Foundation Tier
(Calculator)

Total Marks

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**

Turn over

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.

Turn over

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)

Turn over

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)

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

(continued on the next page)

Turn over

1. continued.

(c) Find the square root of 441

(1 mark)

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)

Turn over

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.

(continued on the next page)

2. continued.

(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)

Turn over

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

(continued on the next page)

Turn over

2. continued.

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

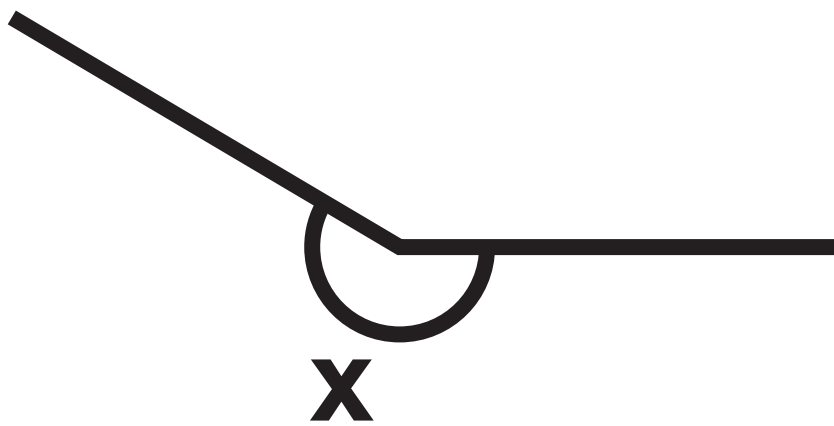
(d) Draw a bar on the bar chart in the Diagram Booklet to show this information.

(1 mark)

(Total for Question 2 is 4 marks)

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

(1 mark)

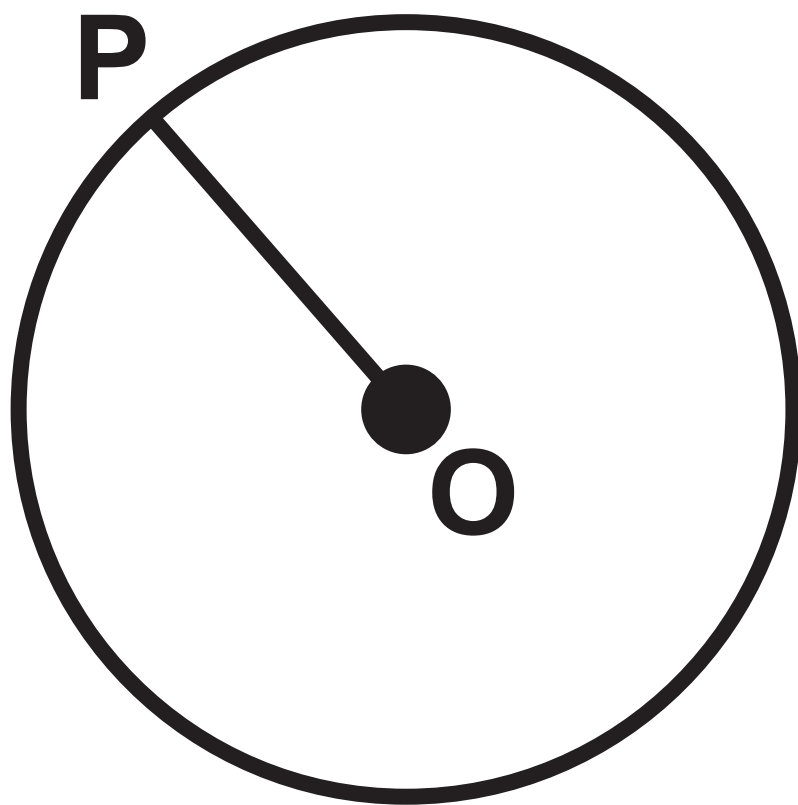


(continued on the next page)

Turn over

3. continued.

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



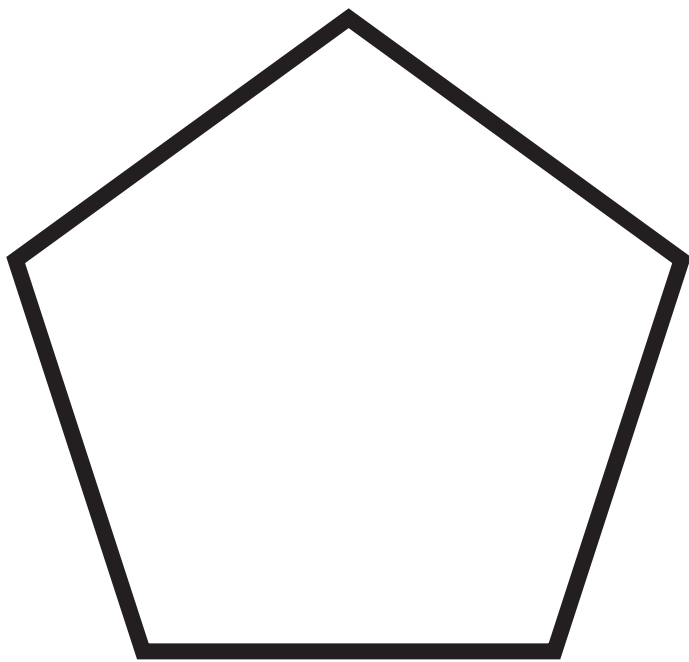
**Write down the mathematical
name of the line OP
(1 mark)**

(continued on the next page)

Turn over

3. continued.

(c) Here is a polygon.



**Write down the mathematical
name of this polygon.**

(1 mark)

(continued on the next page)

Turn over

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)

Turn over

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)

(_____ , _____)

(continued on the next page)

Turn over

4. continued.

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)

Turn over

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)

_____ %

(continued on the next page)

5. continued.

- (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)

Turn over

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

(continued on the next page)

6. continued.

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.

Turn over

6. continued.

_____ **dirhams**

(Total for Question 6 is 4 marks)

Turn over

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

(continued on the next page)

7. continued.

(b) Simplify

$$7p + 5n - 9p + 3n$$

(2 marks)

(continued on the next page)

Turn over

7. continued.

$$\mathbf{T = 8x - 6u}$$

(c) Work out the value of T when

$$\mathbf{x = 9 \text{ and } u = 5}$$

(2 marks)

$$\mathbf{T = \underline{\hspace{10cm}}}$$

(continued on the next page)

Turn over

7. continued.

(d) Solve

$$5m - 6 = 17$$

(2 marks)

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

7. (d) continued.

$m =$ _____

(Total for Question 7 is 7 marks)

Turn over

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.

(continued on the next page)

Turn over

8. continued.

**Write down all the matches that will
take place.**

(Total for Question 8 is 2 marks)

Turn over

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

$$\mathbf{AE = EB}$$

AED and **EBC** are straight lines.

$$\text{Angle } \mathbf{CDE} = 42^\circ$$

$$\text{The reflex angle } \mathbf{ECD} = 296^\circ$$

$$\text{Angle } \mathbf{BAE} = x^\circ$$

Work out the value of **x**

(4 marks)

Answer space is on the next page.

Turn over

9. continued.

X = _____

(Total for Question 9 is 4 marks)

Turn over

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)

Turn over

10. continued.

**(b) Work out the mean number of
rewards.**

(3 marks)

(continued on the next page)

Turn over

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)

Turn over

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.

(continued on the next page)

11. continued.

Work out how many more.

Show your working clearly.

(5 marks)

**Answer space continues on the next
two pages.**

11. continued.

Turn over

11. continued.

(Total for Question 11 is 5 marks)

Turn over

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)

Turn over

- 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 two pages.

13. continued.

Turn over

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)

Turn over

14. continued.

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

(2 marks)

_____ km

(Total for Question 14 is 3 marks)

Turn over

**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)

(continued on the next page)

Turn over

15. continued.

List the members of the set

(b) $A \cap B$

(1 mark)

(continued on the next page)

Turn over

15. continued.

List the members of the set

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

(1 mark)

(Total for Question 15 is 3 marks)

Turn over

- 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 two pages.

Turn over

16. (b) continued.

Turn over

16. (b) continued.

(Total for Question 16 is 6 marks)

Turn over

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 two pages.

17. continued.

Turn over

17. continued.

_____ %

(Total for Question 17 is 4 marks)

Turn over

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)

Turn over

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)

Answer space continues on the next page.

18. (b) continued.

(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**

(continued on the next page)

Turn over

19. continued.

$$\mathbf{AC = BD = CE = 20\text{ cm}}$$

Work out the perimeter of the shaded shape.

Give your answer correct to the nearest whole number.

(3 marks)

Answer space continues on the next page.

Turn over

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 two pages.

20. continued.

Turn over

20. continued.

_____ euros

(Total for Question 20 is 4 marks)

Turn over

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.**

Turn over

21. continued.

(Total for Question 21 is 2 marks)

Turn over

22. (a) Solve the inequality

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

(2 marks)

(continued on the next page)

Turn over

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)**

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

22. (b) continued.

(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)

Turn over

23. continued.

The number of neurons in a human brain is 8.5×10^{10}

The number of neurons in a monkey brain is 1.47×10^9

The number of neurons in a human brain is

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

(continued on the next page)

23. continued.

(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)

Turn over

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°

(continued on the next page)

24. continued.

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
two pages.**

24. continued.

Turn over

24. continued.

X = _____

(Total for Question 24 is 5 marks)

TOTAL FOR PAPER IS 100 MARKS

END OF PAPER
