

**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.**

<b>Surname</b>					
<b>Other names</b>					
<b>Centre Number</b>					
<b>Candidate Number</b>					

**Y73463A**



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**

**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.**

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**Turn over**

**5**

**Answer ALL TWENTY FOUR questions.**

**Write your answers in the spaces provided.**

**You must write down all the stages in your working.**

**Turn over**

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)

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Hassan says,

“the sum of two prime numbers is  
always even”

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

(1 mark)

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**(Total for Question 1 is 5 marks)**

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**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)**

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**(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)**

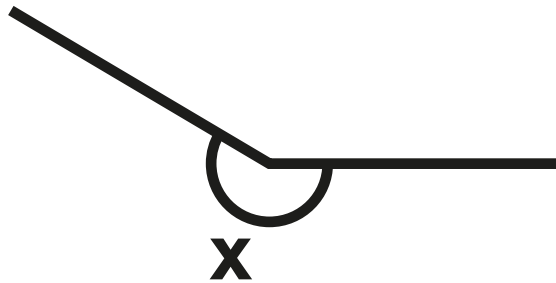
**(Total for Question 2 is 4 marks)**

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**Turn over**

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

(1 mark)



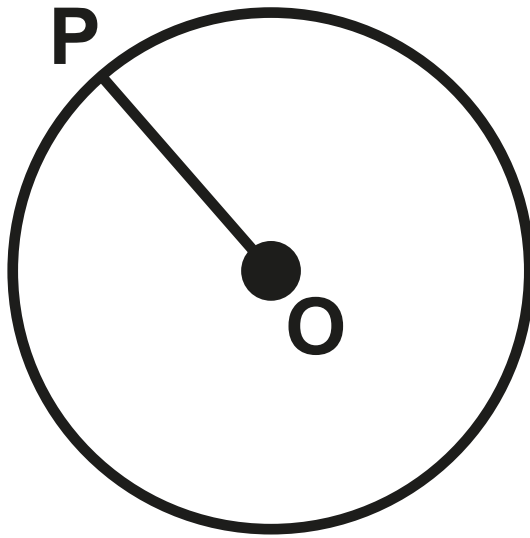
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(continued on the next page)

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)

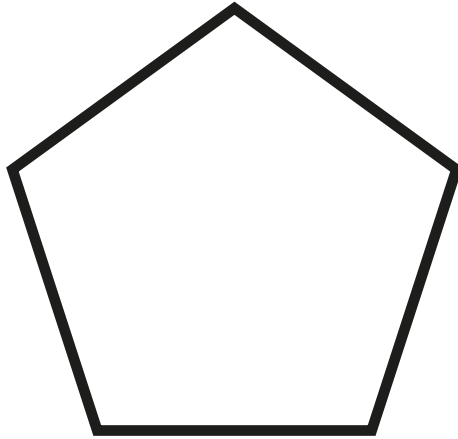
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(continued on the next page)

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)

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(Total for Question 4 is 5 marks)

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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)

Turn over

**5. continued.**

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

**(1 mark)**

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**(continued on the next page)**

**Turn over**

**5. continued.**

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

**(1 mark)**

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**(Total for Question 5 is 4 marks)**

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**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)

Turn over

**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.**

**Turn over**



**6. continued.**

**Turn over**

**6. continued.**

\_\_\_\_\_ dirhams

**(Total for Question 6 is 4 marks)**

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**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)**

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**(continued on the next page)**

**Turn over**

7. continued.

$$T = 8x - 6u$$

(c) Work out the value of  $T$  when

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

(2 marks)

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

(continued on the next page)

Turn over

**7. continued.**

**(d) Solve**

$$5m - 6 = 17$$

**(2 marks)**

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

**Turn over**

7. (d) continued.

$m =$  \_\_\_\_\_

**(Total for Question 7 is 7 marks)**

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**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.**

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**(Total for Question 8 is 2 marks)**

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**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)**

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**(continued on the next page)**

**Turn over**

**10. continued.**

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

**(3 marks)**

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**(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)**

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**(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.**

**Turn over**



**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.**

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**(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)**

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**(continued on the next page)**

**Turn over**

**15. continued.**

**List the members of the set**

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

**(1 mark)**

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**(Total for Question 15 is 3 marks)**

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**Turn over**

**16. (a) Factorise fully**

$$12pq - 18p$$

**(2 marks)**

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**(continued on the next page)**

**Turn over**

**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.

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**(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.**

**Turn over**



**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.**

**Turn over**

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.**

**Turn over**

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.**

**Turn over**

**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)**

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**(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.**

**Turn over**



**22. (b) continued.**

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**(Total for Question 22 is 5 marks)**

---

**Turn over**

**23. (a) Write**

**$5.87 \times 10^{-4}$  as an  
ordinary number.**

**(1 mark)**

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**(b) Write**

**84 000 000 in standard form.**

**(1 mark)**

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**(continued on the next page)**

**Turn over**

**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.**

**(continued on the next page)**

**Turn over**

**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.**

**Turn over**

**23. (c) continued.**

**K = \_\_\_\_\_**

**(Total for Question 23 is 4 marks)**

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**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 =  $40^\circ$**

**Angle CDB is a right angle.**

**Angle CBA =  $x^\circ$**

**(continued on the next page)**

**Turn over**

**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.**

**Turn over**

**24. continued.**

**Turn over**



**24. continued.**

**X = \_\_\_\_\_**

**(Total for Question 24 is 5 marks)**

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**TOTAL FOR PAPER IS 100 MARKS**

**END OF PAPER**

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