

Paper Reference 4MA1/1FR  
Pearson Edexcel  
International GCSE

Total Marks
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Mathematics A  
PAPER 1FR  
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.**

**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.**

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

**You may be provided with models for Question 3(a),  
Question 3(c) and Question 16**

**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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**Answer ALL TWENTY FIVE questions.**

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

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

1. Below is a list of seven numbers.

2      8      14      15      16      18      20

From this list, write down

(a) the odd number  
(1 mark)

---

(b) the multiple of 6  
(1 mark)

---

(continued on the next page)

Turn over

1. continued.

Remember:

2      8      14      15      16      18      20

(c) the square number  
(1 mark)

---

(d) the prime number  
(1 mark)

---

(continued on the next page)

Turn over

**1. continued.**

**Remember:**

**2      8      14      15      16      18      20**

**(e) two numbers with a sum of 26**

**(1 mark)**

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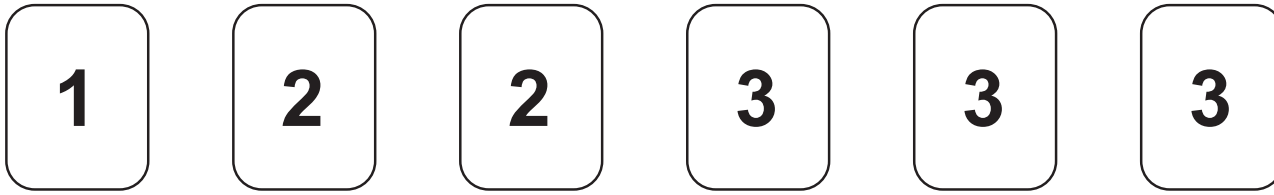
**(Total for Question 1 is 5 marks)**

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**Turn over**

**2. Here are six counters.**

**Each counter has a number on it.**



**Finn takes at random one of these counters.**

- (i) Mark the word that best describes the likelihood that Finn takes a counter with the number 2 on it.**

<b>impossible</b>	
<b>unlikely</b>	
<b>evens</b>	
<b>likely</b>	
<b>certain</b>	

**(continued on the next page)**

**Turn over**



**2. continued.**

**Remember the six counters.**



**(ii) Mark the word that best describes the likelihood that Finn takes a counter with the number 3 on it.**

<b>impossible</b>	
<b>unlikely</b>	
<b>evens</b>	
<b>likely</b>	
<b>certain</b>	

**(continued on the next page)**

**Turn over**

2. continued.

Remember the six counters.



(iii) Mark the word that best describes the likelihood that Finn takes a counter with a number greater than 4 on it.

impossible	
unlikely	
evens	
likely	
certain	

(Total for Question 2 is 3 marks)

---

Turn over

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

You may be provided with a model.

They are NOT accurate.

They show a **3–D** shape.

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

(1 mark)

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(continued on the next page)

**3. continued.**

**(b) (i) How many faces does this shape have?**  
**(1 mark)**

---

**(ii) How many vertices does this shape have?**  
**(1 mark)**

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**(continued on the next page)**

**Turn over**

**3. continued.**

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

**You may be provided with a model.**

**They are NOT accurate.**

**They show a different 3–D shape.**

**Marie makes a model of the shape.**

**She uses a length of wire to make each edge of the model.**

**Each edge of the model is 5 cm long.**

**(continued on the next page)**

**Turn over**

3. continued.

Marie has **70 cm** of wire.

(c) What length of wire does she have left after making the model?

(2 marks)

\_\_\_\_\_ cm

(Total for Question 3 is 5 marks)

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4. (a) Simplify  
 $10y - y$   
(1 mark)
- 

- (b) Simplify  
 $3p \times 4p$   
(1 mark)
- 

(continued on the next page)

4. continued.

(c) Solve

$$7x = 42$$

(1 mark)

$$x = \underline{\hspace{2cm}}$$

(d) Solve

$$n + 6 = 5$$

(1 mark)

$$n = \underline{\hspace{2cm}}$$

(continued on the next page)

Turn over



4. continued.

(e) Simplify

$$8c + 5d - 2c - 3d$$

(2 marks)

---

(Total for Question 4 is 6 marks)

---

Turn over

5. Zoya buys a book and some pencils.

The book costs £6·90

Each pencil costs £0·55

Zoya has a total of £15 to spend on the book and the pencils.

She buys as many pencils as she can.

Work out how many pencils she buys.

(3 marks)

Answer space continues on the next page.

5. continued.

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**(Total for Question 5 is 3 marks)**

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**Turn over**

6. (a) Write down all the factors of 10  
(1 mark)

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- (b) Find the lowest common multiple (LCM) of  
18 and 60  
(2 marks)

---

(Total for Question 6 is 3 marks)

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Turn over

7. (a) Write the five decimals below in order of size.  
Start with the smallest decimal.

0.5    0.54    0.45    0.504    0.405

(1 mark)

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- (b) Write 0.08 as a percentage.  
(1 mark)

\_\_\_\_\_ %

(continued on the next page)

Turn over

7. continued.

(c) Write  $\frac{31}{9}$  as a mixed number.  
(1 mark)

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(continued on the next page)

Turn over

7. continued.

- (d) Find the number that is exactly halfway  
between  $\frac{7}{25}$  and  $0.88$   
(2 marks)

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(Total for Question 7 is 5 marks)

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Turn over

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

It is a two-way table showing some information about the desserts chosen at lunch yesterday by the **80** students from Year **5** and Year **6**  
Each student chose one dessert from apple pie or fruit or ice cream.

- (a) Complete the two-way table in the Diagram Booklet.

There are six spaces to fill.

(3 marks)

(continued on the next page)



8. continued.

(b) What fraction of these 80 students were in Year 5 AND chose apple pie?

Give your answer in its simplest form.

(2 marks)

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(Total for Question 8 is 5 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 a shape **ABCDE**

**BCD** is an isosceles triangle with  **$BD = CD$**

**ABC** is a straight line.

**ABDE** is a quadrilateral.

Work out the value of **X**

Give a reason for each stage of your working.

(4 marks)

Answer space continues on the next page.

9. continued.

**x** = \_\_\_\_\_

(Total for Question 9 is 4 marks)

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Turn over

**10. Look at the diagram for Question 10 in the Diagram Booklet.**

**It shows a graph that can be used to change between dollars and Danish krone.**

- (a) Change 40 dollars to Danish krone.**  
**(1 mark)**

\_\_\_\_\_ Danish krone

- (b) Change 350 Danish krone to dollars.**  
**(1 mark)**

\_\_\_\_\_ dollars

**(continued on the next page)**

**10. continued.**

**Robert needs 950 Danish krone to pay for a hotel stay.**

**He has 170 dollars.**

**(c) Show that Robert has enough money to pay for his hotel stay.**

**(2 marks)**

**(Total for Question 10 is 4 marks)**

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**Turn over**

11. (a) Work out the value of

$$\frac{2 \cdot 5 + 3 \cdot 6}{12 \cdot 7} + \frac{8 \cdot 2}{5 \times 3 \cdot 6}$$

Give your answer as a decimal.

Write down all the figures on your calculator display.

(2 marks)

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(continued on the next page)

**11. continued.**

- (b) Write your answer to part (a) correct to  
3 significant figures.  
(1 mark)**

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**(Total for Question 11 is 3 marks)**

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12. Aarav uses this rule to estimate the time, in minutes, that a bus journey takes.

$$\text{Time} = (2.5 \times \text{length of journey in kilometres}) + (1.5 \times \text{number of bus stops})$$

Aarav's bus journey to work has a length of 12 kilometres.

There are 5 bus stops on the route.

(continued on the next page)



**12. continued.**

**(a) Use Aarav's rule to work out an estimate for the time this bus journey takes.**

**(2 marks)**

\_\_\_\_\_ minutes

**(continued on the next page)**

**Turn over**

**12. continued.**

**A different bus journey takes 55 minutes.**

**There are 8 bus stops on the route.**

**(b) Use Aarav's rule to work out an estimate for the distance of this bus journey.**

**(3 marks)**

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

12. (b) continued.

\_\_\_\_\_ km

(Total for Question 12 is 5 marks)

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

**It is NOT accurately drawn.**

**It shows a box and a container.**

**Tom puts boxes into a shipping container.**

**The container is a cuboid 10 metres by 2·4 metres by 2·4 metres.**

**Each box is a cube of side 40 centimetres.**

**Work out the greatest number of these boxes that Tom can put into the container.**

**(3 marks)**

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

13. continued.

Turn over

13. continued.

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(Total for Question 13 is 3 marks)

---

Turn over

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

**It shows the accurate scale drawing of the positions of two lighthouses, **S** and **T****

- (a) Find, by measuring, the bearing of lighthouse **T** from lighthouse **S** in the Diagram Booklet.**  
**(1 mark)**



**(continued on the next page)**

**14. continued.**

**A boat is on a bearing of  $084^\circ$  from S**

**The boat is 13 km from T**

**(b) On the diagram in the Diagram Booklet, mark  
the position of the boat.**

**Label the position B**

**(3 marks)**

**(Total for Question 14 is 4 marks)**

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**Turn over**



- 15. Look at the table for Question 15 in the Diagram Booklet.**

**The table shows information about the frame size, in cm, of 60 bicycles sold in a shop.**

- (a) Write down the modal class.**

**(1 mark)**

---

- (b) Work out an estimate for the mean frame size.**

**(4 marks)**

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

15. (b) continued.

\_\_\_\_\_ cm

(Total for Question 15 is 5 marks)

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Turn over

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

**You may be provided with a model.**

**They are NOT accurate.**

**They show a solid triangular prism.**

**Work out the TOTAL surface area of the triangular prism.**

**Give your answer correct to 3 significant figures.**

**(3 marks)**

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

16. continued.

\_\_\_\_\_  $\text{cm}^2$

(Total for Question 16 is 3 marks)

---

Turn over

17. Below is a list of six numbers written in order of size.

**x    5    y    z    10    12**

**The numbers have**

**a range of 9**

**a median of 8**

**a mode of 10**

**Find the value of *x*, the value of *y* and the value of *z***

**(3 marks)**

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

17. continued.

**x** = \_\_\_\_\_

**y** = \_\_\_\_\_

**z** = \_\_\_\_\_

(Total for Question 17 is 3 marks)

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Turn over

18. (a) Simplify  
 $w^{12} \div w^3$   
(1 mark)
- 

- (b) Simplify  
 $5m^4p^2 \times 2m^3p$   
(2 marks)
- 

(Total for Question 18 is 3 marks)

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

**Divya and Yuan each pay for a holiday at a special offer price.**

**The amount that Divya pays is the same as the amount that Yuan pays.**

**Work out the value of  $k$   
(4 marks)**

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



19. continued.

$k =$  \_\_\_\_\_

(Total for Question 19 is 4 marks)

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Turn over

20. **C** grams of chocolate is shared in the ratios **2 : 5 : 8**

The difference between the largest share and the smallest share is **390** grams.

Work out the value of **C**

**C** = \_\_\_\_\_

(Total for Question 20 is 3 marks)

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Turn over

**21. Solve the simultaneous equations**

$$x + 2y = 15$$

$$4x - 6y = 4$$

**Show clear algebraic working.**

**(3 marks)**

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

**Turn over**

21. continued.

**x** = \_\_\_\_\_

**y** = \_\_\_\_\_

(Total for Question 21 is 3 marks)

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Turn over

22. (a) Write

$$9.32 \times 10^{-5}$$

as an ordinary number.

(1 mark)

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(b) Work out

$$3 \times 10^5 - 6 \times 10^4$$

Give your answer in standard form.

(2 marks)

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(continued on the next page)

Turn over

**22. continued.**

**(c) Work out**

$$(3 \times 10^{55}) \times (6 \times 10^{65})$$

**Give your answer in standard form.**

**(2 marks)**

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

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**Turn over**

23. (a) Factorise fully  
 $18c^3d^2 - 21c^2$   
(2 marks)
- 

- (b) (i) Factorise  
 $y^2 - 3y - 18$   
(2 marks)
- 

(continued on the next page)

Turn over

23. (b) continued.

(ii) Hence, solve

$$y^2 - 3y - 18 = 0$$

(1 mark)

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(Total for Question 23 is 5 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 an isosceles triangle ABC**

$$AB = 7 \text{ cm}$$

$$AC = BC = y \text{ cm}$$

**The area of the triangle is  $42 \text{ cm}^2$**

**Work out the value of  $y$**

**(4 marks)**

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

24. continued.

$y =$  \_\_\_\_\_

(Total for Question 24 is 4 marks)

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Turn over

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

**It is NOT accurately drawn.**

**It shows a circle, centre O**

**R and T are points on the circle.**

**$RT = 12 \text{ cm}$**

**M is the midpoint of RT**

**Angle ROM =  $52^\circ$**

**Work out the area of the circle.**

**Give your answer correct to 3 significant figures.**

**(4 marks)**

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

25. continued.

\_\_\_\_\_ cm<sup>2</sup>

(Total for Question 25 is 4 marks)

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**TOTAL FOR PAPER IS 100 MARKS**

**END OF PAPER**

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