

**Paper Reference 4MA1/1FR**  
**Pearson Edexcel**  
**International GCSE**

<b>Total Marks</b>
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**Mathematics A**  
**PAPER 1FR**  
**Foundation Tier**  
**(Calculator)**

**Time: 2 hours plus your additional time allowance**

**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>					

**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 a shape for Question 12**

**You may be provided with a model for Question 24**

## 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 FOUR questions.**

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

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

**7**

<b>1.</b>	<b>10</b>	<b>15</b>	<b>23</b>	<b>25</b>
	<b>27</b>	<b>28</b>	<b>33</b>	<b>35</b>

**(a) From the eight numbers above,  
write down**

**(i) an even number**

---

**(ii) a multiple of 9**

---

**(continued on the next page)**

**Turn over**

1. (a) continued.

**Remember:**

<b>10</b>	<b>15</b>	<b>23</b>	<b>25</b>
<b>27</b>	<b>28</b>	<b>33</b>	<b>35</b>

**From the eight numbers above,  
write down**

**(iii) a prime number  
(3 marks)**

---

**(continued on the next page)**

**Turn over**



**1. continued.**

**Look at the diagram for Question 1(b)  
in the Diagram Booklet.**

**It shows four cards.**

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

**The four cards are arranged to make  
the number **7358****

**(continued on the next page)**

**1. continued.**

**Look at the diagram for**

**Question 1(b)(i) in the**

**Diagram Booklet.**

**It shows four blank cards.**

**(b) (i) Show how the original  
four cards can be arranged  
to make the smallest number  
using all four cards.**

**(continued on the next page)**

**1. (b) continued.**

**Look at the diagram for  
Question 1(b)(ii) in the  
Diagram Booklet.**

**It shows an incomplete  
calculation.**

**(ii) Show how the original  
four cards can be arranged  
to make a correct calculation  
in the Diagram Booklet.**

**(2 marks)**

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

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

**It shows three shapes labelled A, B and C**

**Shape A is a triangle.**

**(a) Write down the mathematical name for this type of triangle.**  
**(1 mark)**

---

**(continued on the next page)**

**Turn over**

**2. continued.**

**Shape B is a rectangle.**

**(b) On shape B in the  
Diagram Booklet, draw its lines  
of symmetry.**

**(1 mark)**

**(continued on the next page)**

**2. continued.**

**Shape C is a regular polygon.**

- (c) Write down the order of rotational symmetry of shape C**  
**(1 mark)**
- 

**(Total for Question 2 is 3 marks)**

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**3. (a) Change 6 metres into centimetres.**

**(1 mark)**

\_\_\_\_\_ centimetres

**(b) Change 4500 grams into kilograms.**

**(1 mark)**

\_\_\_\_\_ kilograms

**(continued on the next page)**

**Turn over**

**3. continued.**

**Lauren has 3 litres of fruit juice.**

**She is going to use the fruit juice to make some drinks for a party.**

**Each cup of drink will contain 225 millilitres of fruit juice.**

**Lauren is going to make as many cups of drink as possible.**

**(c) Work out how much fruit juice Lauren has left when she has made as many cups of drink as possible.**

**Give your answer in millilitres.**

**(4 marks)**

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

**Turn over**



**3. (c) continued.**

\_\_\_\_\_ millilitres

**(Total for Question 3 is 6 marks)**

---

**Turn over**

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

**It shows an incomplete pictogram.**

**40 people were asked to name their favourite type of holiday.**

**The pictogram in the Diagram Booklet gives information about the number of these people who said each of City Break or Beach or Walking.**

**(continued on the next page)**

**4. continued.**

**(a) How many of these people said**

**Beach?**

**(1 mark)**

---

**(continued on the next page)**

**Turn over**

**4. continued.**

**4 people said Cruise.**

**9 people said Skiing.**

**(b) Show this information on the  
pictogram in the  
Diagram Booklet.  
(2 marks)**

**(continued on the next page)**

**4. continued.**

**One person from the 40 people asked is selected at random.**

**(c) Find the probability that this person said City Break.**

**(2 marks)**

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

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**Turn over**

- 5. Below are the first 4 terms of a number sequence.**

**7                  12                  17                  22**

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

**(1 mark)**

---

**(continued on the next page)**

**5. (a) continued.**

**(ii) Explain how you worked out  
your answer.**

**(1 mark)**

---

---

**(continued on the next page)**

**5. continued.**

**Remember:**

**Below are the first 4 terms of  
a number sequence.**

**7**

**12**

**17**

**22**

**(b) Is 256 a number in the  
sequence?**

**Mark one of the boxes below and  
give a reason on the next page  
for your answer.**

**Yes**

☐

**No**

☐

**Turn over**



**5. (b) continued.**

**Give a reason for your answer.**

**(1 mark)**

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

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6. (a) Write the five numbers below in order of size.

Start with the smallest number.

0.47

0.4

0.74

0.477

0.407

(1 mark)

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(continued on the next page)

Turn over

**6. continued.**

**(b) Write**

**$0.7$  as a fraction.**

**(1 mark)**

---

**(continued on the next page)**

**Turn over**

**6. continued.**

**(c) Write**

**30 as a fraction of 48**

**Give your fraction in its  
simplest form.**

**(2 marks)**

---

**(continued on the next page)**

**Turn over**

**6. continued.**

**(d) Write**

**23% as a decimal.**

**(1 mark)**

---

**(continued on the next page)**

**Turn over**

**6. continued.**

**Rita has some beads in a bag.**

**Of these beads, Rita gives**

**$\frac{1}{2}$  to Sheng**

**and  $\frac{2}{5}$  to Tusco**

**Rita now has 3 beads left in the bag.**

**(e) Work out how many beads Rita originally had in the bag.**

**(3 marks)**

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

**Turn over**

**6. (e) continued.**

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**(Total for Question 6 is 8 marks)**

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**Turn over**

7. (a) Simplify

$$3p + 5q - p + 2q$$

(2 marks)

---

(b) Simplify

$$8t \times 5u$$

(1 mark)

---

(continued on the next page)

Turn over



**7. continued.**

**(c) Solve**

$$5r - 3 = 8$$

**(2 marks)**

**$r =$  \_\_\_\_\_**

**(Total for Question 7 is 5 marks)**

---

**Turn over**

8. Look at the diagram for Question 8(a) in the Diagram Booklet.

It is NOT accurately drawn.

**ABC** is a straight line and **BCD** is a triangle.

angle **BDC** =  $93^\circ$

angle **DCB** =  $42^\circ$

angle **ABD** =  $x^\circ$

(continued on the next page)

**8. continued.**

**(a) Work out the value of  $x$**   
**(2 marks)**

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

**(continued on the next page)**

**Turn over**

**8. continued.**

**Look at the diagram for Question 8(b)  
in the Diagram Booklet.**

**It is NOT accurately drawn.**

**It shows four straight lines,  
PO, RO, SO and TO**

**angle POR =  $100^\circ$**

**angle ROS is a right angle.**

**angle SOT =  $114^\circ$**

**angle TOP =  $y^\circ$**

**(continued on the next page)**

**8. continued.**

**(b) (i) Work out the value of  $y$**   
**(2 marks)**

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

**(ii) Give a reason for your**  
**answer.**

**(1 mark)**

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**(Total for Question 8 is 5 marks)**

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**Turn over**

- 9. Look at the information for Question 9 in the Diagram Booklet. In November, Andre received a monthly salary of 2500 euros.**

**The information in the Diagram Booklet shows how he spent his monthly salary.**

**Work out how much of his November monthly salary Andre spent on food.  
(4 marks)**

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

9. continued.

Turn over

9. continued.

\_\_\_\_\_ euros

**(Total for Question 9 is 4 marks)**

---

**Turn over**



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

**It shows an incomplete Venn diagram.**

**50 students have lessons at a dance school.**

**Two of the lessons are ballet lessons (B) and tap lessons (T)**

**(continued on the next page)**

**10. continued.**

**Of the 50 students**

**31 have ballet lessons**

**27 have tap lessons**

**18 have ballet lessons and  
tap lessons**

**Complete the Venn diagram in the  
Diagram Booklet for this information.**

**(Total for Question 10 is 3 marks)**

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**11. Look at the table for Question 11 in the Diagram Booklet.**

**It shows information about the number of eggs laid by each of 36 hens in one week.**

**Work out the mean number of eggs laid.**

**(3 marks)**

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

**11. continued.**

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

---

**Turn over**

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

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

**A cut out shape may be available if you wish to use it.**

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

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**(continued on the next page)**

**Turn over**

**12. continued.**

- (b) On the grid in the  
Diagram Booklet, enlarge  
triangle **A** with scale factor **2** and  
centre **O**  
Label your triangle **C**  
(2 marks)**

**(Total for Question 12 is 4 marks)**

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**13. (a) Factorise**

$$6x - 15$$

**(1 mark)**

---

**(continued on the next page)**

**13. continued.**

**Look at the information  
for Question 13(b) in the  
Diagram Booklet.**

**(b) Write down a formula for  $T$  in  
terms of  $p$  and  $q$   
(3 marks)**

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



**13. (b) continued.**

---

**(Total for Question 13 is 4 marks)**

---

**Turn over**

**14. Work out the value of**

$$\sqrt{7 \cdot 4} + \frac{5 \cdot 1^2}{3}$$

**Write down all the figures on your calculator display.**

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**(Total for Question 14 is 2 marks)**

---

**Turn over**

**15.  $n$  is an integer.**

**(a) Write down all the values of  $n$   
such that**

$$\mathbf{-2 \leq n < 3}$$

**(2 marks)**

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**(continued on the next page)**

**Turn over**

**15. continued.**

**Look at the diagram for  
Question 15(b) in the  
Diagram Booklet.**

**It shows a number line.**

- (b) On the number line, represent the  
inequality  $y \leq 1$   
(1 mark)**

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

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- 16. Each time John plays a game, the probability that he wins the game is  $0.65$**

**John is going to play the game 300 times.**

**Work out an estimate for the number of games that John wins.**

**(2 marks)**

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

**16. continued.**

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**(Total for Question 16 is 2 marks)**

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**Turn over**

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

**It is NOT accurately drawn.**

**It shows a shaded shape made using three identical right-angled triangles and a square.**

**The hypotenuse of each triangle is 16 cm and the longer of the other two sides is 12.8 cm**

**Work out the perimeter of the shaded shape.**

**(4 marks)**

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

**Turn over**

17. continued.

Turn over



**17. continued.**

\_\_\_\_\_ **cm**

**(Total for Question 17 is 4 marks)**

---

**Turn over**

18. (a) Complete the table of values  
below for

$$y = x^2 - 4x + 3$$

There are four spaces to fill.

(2 marks)

x	y
-2	
-1	8
0	3
1	
2	
3	0
4	

(continued on the next page)

Turn over

**18. continued.**

**Look at the diagram for**

**Question 18(b) in the**

**Diagram Booklet.**

**It shows a blank grid.**

**(b) On the grid, draw the graph of**

$$y = x^2 - 4x + 3 \text{ for values of } x$$

**from  $-2$  to  $4$**

**(2 marks)**

**(Total for Question 18 is 4 marks)**

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**19. Yusuf sat 8 examinations.**

**Below are his marks for 5 of the examinations.**

**68          72          75          77          80**

**For his results in all 8 examinations**

**the mode of his marks is 80**

**the median of his marks is 74**

**the range of his marks is 16**

**(continued on the next page)**

**19. continued.**

**Find Yusuf's marks for each of the other 3 examinations.**

**(4 marks)**

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

19. continued.

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**(Total for Question 19 is 4 marks)**

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**Turn over**

- 20. (a) Work out the lowest common multiple (LCM) of 36 and 120  
(2 marks)**

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**(continued on the next page)**

**Turn over**

**20. continued.**

$$A = 5^2 \times 7^4 \times 11^p$$

$$B = 5^m \times 7^{n-5} \times 11$$

**m, n and p are integers such that**

$$m > 2$$

$$n > 10$$

$$p > 1$$

**(b) 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 is on the next page.**

**Turn over**



**20. (b) continued.**

---

**(Total for Question 20 is 4 marks)**

---

**Turn over**

**21. Look at the information for Question 21 in the Diagram Booklet.**

**Work out Milly's average speed, in km/h, for the journey from Anesey to Duckbridge.**

**Give your answer correct to one decimal place.**

**(4 marks)**

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

**21. continued.**

**Turn over**

**21. continued.**

\_\_\_\_\_ **km/h**

**(Total for Question 21 is 4 marks)**

---

**Turn over**

**22. (a) Write**

**$5 \times 10^4$  as an ordinary number.**

**(1 mark)**

---

**(continued on the next page)**

**22. continued.**

**(b) Write**

**0·000 06 in standard form.**

**(1 mark)**

---

**(continued on the next page)**

**Turn over**

**22. continued.**

**(c) Work out**

$$(4 \times 10^{512}) \div (1.6 \times 10^{700})$$

**Give your answer in  
standard form.**

**(2 marks)**

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

**22. (c) continued.**

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**(Total for Question 22 is 4 marks)**

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- 23. (a) Simplify**  
 **$m^4 \times m^5$**   
**(1 mark)**

---

**(continued on the next page)**

**23. continued.**

**(b) Simplify**

$$(4y^2)^3$$

**(2 marks)**

---

**(continued on the next page)**

**Turn over**

**23. continued.**

**(c) Factorise**

$$n^2 - 7n + 12$$

**(2 marks)**

---

**(Total for Question 23 is 5 marks)**

---

**Turn over**

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

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

**They are NOT accurate.**

**Jonty has a storage container in the shape of a cuboid, as shown by the diagram and the model.**

**It has length 12 metres and width 2.5 metres and height 3 metres.**

**(continued on the next page)**

**24. continued.**

**Jonty is going to paint the outside of his storage container, apart from the base which is shown shaded.**

**The base has length 12 metres and width 2·5 metres.**

**He needs enough paint to cover the four sides and the top.**

**Each tin of paint covers an area of  $15\text{m}^2$**

**The cost of each tin of paint recently increased by 10%**

**AFTER the increase, the cost of each tin of paint is £26·95**

**(continued on the next page)**

**Turn over**

**24. continued.**

**Jonty says**

**“BEFORE the increase, I could  
have bought enough paint for  
less than £200”**

**Show that Jonty is correct.**

**Show your working clearly.**

**(6 marks)**

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

**Turn over**

**24. continued.**

**Turn over**

**24. continued.**

**Turn over**



**24. continued.**

**(Total for Question 24 is 6 marks)**

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**TOTAL FOR PAPER IS 100 MARKS**

**END OF PAPER**

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