

Paper Reference 4MA1/2F  
Pearson Edexcel  
International GCSE

Total Marks
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Mathematics A  
PAPER 2F  
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 a model for Question 14**

## **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. Look at the information for Question 1 in the Diagram Booklet.

It shows four cards.

Each card has a number on it.

The four cards are arranged to make the number **5763**

- (a) Arrange the four cards to make the smallest possible number.

(1 mark)

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- (b) Arrange the four cards to make the largest possible EVEN number.

(1 mark)

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(continued on the next page)

Turn over

**1. continued.**

**(c) Arrange two of the cards to make a prime number.**

**(1 mark)**

<input type="text"/>	<input type="text"/>
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**(d) Arrange two of the cards to make a multiple of 8**

**(1 mark)**

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**(Total for Question 1 is 4 marks)**

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**Turn over**

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

**It is a pictogram.**

**It shows information about the total weight of potatoes grown last year in each of four countries.**

**The pictogram shows one country where the total weight of potatoes grown last year was 20 million tonnes.**

- (a) Which country?**  
**(1 mark)**

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**(continued on the next page)**

**2. continued.**

**Last year, the weight of potatoes grown in  
The Netherlands was 6 million tonnes.**

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

**(1 mark)**

**(c) Work out the total weight of potatoes grown in  
Germany AND in France last year.**

**(2 marks)**

\_\_\_\_\_ million tonnes

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

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**Turn over**



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

**It is a number scale.**

- (a) On the scale, mark the number 554  
(1 mark)**

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

**It is a different number scale.**

- (b) Write down the number shown marked by the arrow.  
(1 mark)**

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

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4. (a) In the space below, draw a line of length **6.5 cm**

A starting point is given.

(1 mark)



Look at the diagram for Question 4(b) in the Diagram Booklet.

It shows the straight lines **QP** and **QR**

- (b) Measure the size of angle **PQR**

(1 mark)



(Total for Question 4 is 2 marks)

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5. Look at the table for Question 5 in the Diagram Booklet.

It gives information about the costs of sending parcels of different weights.

Peony has one parcel of weight  $1.3 \text{ kg}$  and another parcel of weight  $8 \text{ kg}$  to send to two different places.

- (a) Work out the total cost of sending these two parcels.

(2 marks)

£ \_\_\_\_\_

(continued on the next page)

**5. continued.**

**Gryffyn sends 3 parcels each to a different place.**

**One of the parcels has a weight of 1·5 kg and**

**another of the parcels has a weight of 2·8 kg**

**The total cost of sending the 3 parcels is £33·89**

**(b) Work out the greatest possible weight of the third parcel.**

**(3 marks)**

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

5. (b) continued.

\_\_\_\_\_kg

(Total for Question 5 is 5 marks)

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6. (a) Write **5 15 pm** using the **24-hour** clock.  
(1 mark)

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Roberta goes out for a walk.

She leaves home at **16 35**

She arrives back home at **20 15** on the same day.

- (b) Work out for how much time Roberta is out for her walk.  
(2 marks)

\_\_\_\_\_ hours \_\_\_\_\_ minutes

(Total for Question 6 is 3 marks)

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Turn over

7. (a) Simplify

$$t \times t \times t \times t \times t$$

(1 mark)

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(b) Solve

$$5 + p = 12$$

(1 mark)

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

(continued on the next page)

7. continued.

(c) Solve

$$\frac{y}{6} = 3$$

(1 mark)

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

(d) Expand

$$5(2 + 3m)$$

(1 mark)

\_\_\_\_\_

(continued on the next page)



7. continued.

(e) Factorise

$$n^2 + 7n$$

(1 mark)

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(Total for Question 7 is 5 marks)

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

**It is a number machine.**

**(a) Work out the output when the input is 9  
(1 mark)**

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**(continued on the next page)**

**8. continued.**

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

**It is a different number machine.**

**When the input is 30 the output is 18**

**(b) Find a suitable way to complete the  
number machine in the Diagram Booklet.  
(1 mark)**

**(continued on the next page)**

**8. continued.**

**The following rule is used to work out the total cost, in euros, of hiring a cement mixer.**

**Total cost = 8 euros per day plus 5 euros**

**James hires a cement mixer for 3 days.**

**(c) Work out the cost to James of hiring the cement mixer.**

**(1 mark)**

\_\_\_\_\_ euros

**(continued on the next page)**

8. continued.

Remember:

**Total cost = 8 euros per day plus 5 euros**

**The cost to Sophia of hiring a cement mixer is 61 euros.**

**(d) For how many days does Sophia hire the cement mixer?  
(2 marks)**

\_\_\_\_\_ days

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

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**Turn over**

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

There are **120** cyclists in a cycling club.

There are **67** professional cyclists and the rest are amateur cyclists.

Each of these cyclists was asked to name their favourite type of bike.

The two-way table shows some information about their answers.

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

There are six spaces to fill.

(3 marks)

(continued on the next page)

9. continued.

(b) Work out the percentage of the cyclists who answered Mountain bike.

(2 marks)

\_\_\_\_\_ %

(continued on the next page)

Turn over

**9. continued.**

**Jacob is going to draw a pie chart for the age groups of the 120 cyclists.**

**There are 41 people in the ‘over 60’ age group.**

- (c) Work out the size of the angle for the sector representing the ‘over 60’ age group.**  
**(2 marks)**

\_\_\_\_\_ °

**(Total for Question 9 is 7 marks)**

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

**The frequency table shows information about the number of cookies made by each of the 21 people in a cookery class.**

**(a) Write down the mode of the number of cookies made.**

**(1 mark)**

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**(continued on the next page)**

**10. continued.**

- (b) Find the median number of cookies made.  
(2 marks)**

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**(continued on the next page)**

**10. continued.**

- (c) Find the total number of cookies made by the  
21 people in the cookery class.  
(2 marks)**

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**(Total for Question 10 is 5 marks)**

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**Turn over**

11. (a) Work out the value of  
 $(4 + 3 + 6)^2$   
(1 mark)
- 

- (b) Given that

$$64 = 4^n$$

write down the value of  $n$

(1 mark)

$n =$  \_\_\_\_\_

(continued on the next page)

Turn over

11. continued.

(c) Work out the value of

$$\frac{\sqrt{9 \cdot 3 + 2 \cdot 8^3}}{3 \cdot 2 \times 1 \cdot 2}$$

Write down all the figures on your calculator display.

(2 marks)

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(Total for Question 11 is 4 marks)

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Turn over

12. Last season, Alisha and Jaya scored goals for their team in the ratio **4:7**  
Jaya scored **39** more goals than Alisha.

Work out the number of goals Alisha scored.

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(Total for Question 12 is 3 marks)

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**13. There are 380 students in a Sixth Form.**

**The students are either in the Upper Sixth or in the Lower Sixth.**

**The number of students in the Upper Sixth is 20 fewer than the number of students in the Lower Sixth.**

**$\frac{2}{5}$  of the Upper Sixth students study mathematics.**

**32% of the Lower Sixth students study mathematics.**

**Work out the total number of students in the Sixth Form who study mathematics.**

**(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)

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- 14. Look at the diagrams for Question 14 in the Diagram Booklet.**

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

**They are NOT accurate.**

**Diagram 1 and the model show a solid prism.**

**Diagram 2 shows the cross section of the solid prism.**

**In Diagram 2**

$$\mathbf{AB = 6\text{ cm}}$$

$$\mathbf{CD = 7.5\text{ cm}}$$

$$\mathbf{AF = 14\text{ cm}}$$

$$\mathbf{DE = x\text{ cm}}$$

**All marked angles are right angles.**

**The length of the prism is 8 cm**

**The volume of the prism is  $924\text{ cm}^3$**

**Work out the value of  $x$**

**(4 marks)**

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

14. continued.

14. continued.

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

(Total for Question 14 is 4 marks)

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Turn over

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

It is NOT accurately drawn.

It shows two parallel lines **AB** and **DEF**

**BEG** is a straight line.

angle **DEG** =  $73^\circ$

angle **EBC** =  $124^\circ$

angle **ABC** =  $w^\circ$

Work out the value of **w**

Give reasons for each stage of your working.

(4 marks)

Answer space continues on the next page.

15. continued.

**W =** \_\_\_\_\_

**(Total for Question 15 is 4 marks)**

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**Turn over**

16. Show that

$$3\frac{5}{7} \div 1\frac{5}{8} = 2\frac{2}{7}$$

(Total for Question 16 is 3 marks)

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Turn over

17. Change a speed of **90** kilometres per hour to a speed in metres per second.

Show your working clearly.

\_\_\_\_\_ m/s

(Total for Question 17 is 3 marks)

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Turn over



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

$$\mathcal{E} = \{11, 12, 13, 14, 15, 16, 17, 18, 19, 20\}$$

$$A = \{\text{even numbers}\}$$

$$A \cap B = \{12, 16, 20\}$$

$$(A \cup B)' = \{17, 19\}$$

Complete the Venn diagram in the Diagram Booklet for the sets  $\mathcal{E}$ ,  $A$  and  $B$

(Total for Question 18 is 3 marks)

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

It is NOT accurately drawn.

It shows rectangle **ABCD**

$$AB = 24 \text{ cm}$$

$$BC = (3y + 7 \cdot 4) \text{ cm}$$

$$AD = (5y - 1) \text{ cm}$$

Work out the perimeter of the rectangle.

Show your working clearly.

(4 marks)

Answer space continues on the next page.

19. continued.

\_\_\_\_\_ cm

(Total for Question 19 is 4 marks)

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Turn over

20. The weight of a cake is **2.75 kg**, correct to 2 decimal places.

(a) Write down the lower bound of the weight of the cake.

(1 mark)

\_\_\_\_\_ kg

(b) Write down the upper bound of the weight of the cake.

(1 mark)

\_\_\_\_\_ kg

(continued on the next page)

Turn over

20. continued.

Penny has worked out

$$\frac{81.3 \times 59.2}{1.9^2} \text{ on her calculator.}$$

Her answer is

**13 332.299 17**

Penny's answer is not sensible.

(c) By rounding each number to one significant figure, work out a suitable estimate to show that her answer is not sensible.

Show your working clearly.

(2 marks)

Answer space continues on the next page.

**20. (c) continued.**

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

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**Turn over**

21. The points **A** and **B** are on a coordinate grid.

The coordinates of **A** are **(6, 4)**

The coordinates of **B** are **(17, r)** where **r** is a constant.

The midpoint of **AB** has coordinates **(k, 15)** where **k** is a constant.

Find the value of **r** and the value of **k**  
(3 marks)

Answer space continues on the next page.

21. continued.

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

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

(Total for Question 21 is 3 marks)

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**22. Solve the simultaneous equations**

$$5x + 4y = -2$$

$$2x - y = 4.4$$

**Show clear algebraic working.**

**(3 marks)**

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

**22. continued.**

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

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

**(Total for Question 22 is 3 marks)**

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**Turn over**

**23. Look at the information for Question 23 in the Diagram Booklet.**

**Matteo is going to invest 5000 Swiss francs for two years.**

**He can invest his money in Bank G or in Bank H**

**The interest rates for these banks are shown in the Diagram Booklet.**

**The total amount of interest Matteo would receive at the end of two years from Bank G is more than the amount of interest Matteo would receive at the end of two years from Bank H**

**How much more?**

**(4 marks)**

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

23. continued.

\_\_\_\_\_ Swiss francs

(Total for Question 23 is 4 marks)

\_\_\_\_\_

Turn over

24. (a) Write down the value of  $(m + 2)^0$  where  $m$  is a positive integer.  
(1 mark)
- 

- (b) Simplify  $(3p^2q^4)^3$   
(2 marks)
- 

(continued on the next page)

24. continued.

(c) Factorise fully

$$14x^2y^4 + 21x^3y^2$$

(2 marks)

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(continued on the next page)

**24. continued.**

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

**It shows a straight line drawn on a grid.**

**(d) Write down an equation of the line.  
(2 marks)**

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**(Total for Question 24 is 7 marks)**

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

**It is NOT accurately drawn.**

**It shows an isosceles triangle, with  
base length 24 cm**

**The perimeter of the triangle is 54 cm**

**Work out the area of the triangle.**

**(5 marks)**

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



25. continued.

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

(Total for Question 25 is 5 marks)

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**TOTAL FOR PAPER IS 100 MARKS**

**END OF PAPER**

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