

**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.**

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

**Y68797RA**

**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.**

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

**You may be provided with six shapes for Question 2**

**You may be provided with a shape 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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**6**

**Answer ALL TWENTY EIGHT  
questions.**

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

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

**Turn over**

1. (a) Write  $0.3$  as a percentage.  
(1 mark)

\_\_\_\_\_ %

- (b) Write  $\frac{29}{100}$  as a decimal.  
(1 mark)

\_\_\_\_\_

(continued on the next page)

Turn over

1. continued.

(c) Write

$\frac{17}{20}$  as a decimal.

(1 mark)

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(continued on the next page)

Turn over

1. continued.

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

Start with the smallest number.

**-7      8      -9      16      -3**

(1 mark)

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(continued on the next page)

Turn over

1. continued.

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

Start with the smallest number.

0·044      0·104      0·04

0·009      0·2

(1 mark)

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(continued on the next page)

Turn over

1. continued.

There are **400** cars in a car park.

$\frac{3}{10}$  of the cars are grey.

(f) Work out how many of the cars in the car park are **NOT** grey.

(2 marks)

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**(Total for Question 1 is 7 marks)**

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**Turn over**

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

**It shows six shapes on a grid labelled A, B, C, D, E and F**

**1 square length on the grid represents 1 cm**

**Six cut out shapes may be available if you wish to use them.**

**(a) Write down the letters of the two shapes that are congruent.**

**(1 mark)**

\_\_\_\_\_ and \_\_\_\_\_

**(continued on the next page)**

**Turn over**

**2. continued.**

**Two of the six shapes are similar but are not congruent.**

**(b) Write down the letters of these two shapes.**

**(1 mark)**

\_\_\_\_\_ and \_\_\_\_\_

**(continued on the next page)**

**2. continued.**

**Shape E has exactly one line of symmetry.**

**(c) On shape E on the grid in the Diagram Booklet, draw this line of symmetry.**

**(1 mark)**

**(d) Work out the perimeter of shape B**

**(1 mark)**

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

**(continued on the next page)**

**Turn over**

2. continued.

(e) Work out the area of shape **F**  
(1 mark)

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

**(Total for Question 2 is 5 marks)**

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**16**

- 3. Below are the first five terms of a number sequence.**

**7      13      19      25      31**

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

**(1 mark)**

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**(continued on the next page)**

**Turn over**

3. (a) continued.

Remember:

Below are the first five terms of a number sequence.

7            13            19            25            31

(ii) Explain how you found your answer to part (a)(i)  
(1 mark)

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(continued on the next page)

Turn over

**3. continued.**

**Remember:**

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

**7      13      19      25      31**

**The 30th term of the sequence is 181**

**(b) Work out the 28th term of the sequence.**

**(1 mark)**

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

**3. (b) continued.**



**(continued on the next page)**

**Turn over**

3. continued.

**Remember:**

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

**7      13      19      25      31**

**Brian says that 96 is a number in the sequence.**

**Brian is wrong.**

**(c) Explain why.**

**(1 mark)**

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

3. (c) continued.

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**(Total for Question 3 is 4 marks)**

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

**It is a bar chart which shows information about the weight, in millions of tonnes, of the potatoes produced by each of four countries in 2016**

**In 2016, one of these four countries produced 10 million tonnes of potatoes.**

**(continued on the next page)**

4. continued.

(a) Which country?

(1 mark)

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In 2016, Country E produced  
5 million tonnes of potatoes.

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

(1 mark)

(continued on the next page)

Turn over

4. continued.

In **2016**, the weight of potatoes produced by **Country C** was greater than the weight of potatoes produced by the **Country A**.

(c) How many million tonnes greater?

(1 mark)

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

**(Total for Question 4 is 3 marks)**

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Turn over

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

Jian has two fair spinners as shown in the diagram.

Spinner **A** is 3-sided and can land on 1, 2 or 3

Spinner **B** is 5-sided and can land on 2, 4, 6, 8 or 10

Jian spins each spinner once.

He adds together the number that spinner **A** lands on and the number that spinner **B** lands on to get his total score.

(continued on the next page)

Turn over

**5. continued.**

**(a) Complete the table in the Diagram Booklet to show all possible total scores.**

**Five of the total scores have been done for you.**

**There are ten spaces to fill.**

**(2 marks)**

**(continued on the next page)**

**5. continued.**

**(b) Find the probability that**

**(i) Jian's total score is an  
odd number**

**(1 mark)**

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**(ii) Jian's total score is less  
than 9**

**(1 mark)**

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

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**Turn over**

6. Look at the information for Question 6 in the Diagram Booklet. It shows two special offers for buying dog food.

Gaspar buys **24** tins of dog food using special offer **A**

Anna buys **24** tins of dog food using special offer **B**

Work out the difference between the amount that Gaspar pays and the amount that Anna pays.

(4 marks)

Answer space is on the next two pages.

Turn over

**6. continued.**

**Turn over**

6. continued.

\$ \_\_\_\_\_

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

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**Turn over**

7. A circle has radius  $6.5 \text{ cm}$

Calculate the circumference of the circle.

Give your answer correct to 3 significant figures.

\_\_\_\_\_ cm

**(Total for Question 7 is 2 marks)**

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**8. Mairi has 200 flowers.**

**Of these flowers**

**37 are white**

**25 are yellow**

**42 are pink**

**The rest of the flowers are red.**

**Express the number of red flowers  
as a fraction of the total number of  
flowers.**

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

**(3 marks)**

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

**Turn over**

8. continued.

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**(Total for Question 8 is 3 marks)**

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**Turn over**

9. **3 cups each contain 200 millilitres of water.**

**4 jugs each contain  $X$  millilitres of water.**

**Emma pours all the water from the 3 cups and the 4 jugs into a container.**

**The total amount of water that Emma pours into the container from the 3 cups and 4 jugs is  $3.5$  litres.**

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

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

**Turn over**

**9. continued.**

**Turn over**

9. continued.

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

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

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

**It shows a kite drawn on a grid and a blank grid.**

**1 square length on the grids represents 1 cm**

**On the blank grid in the Diagram Booklet, draw a rectangle that has the same area as the kite.**

**(3 marks)**

**Space for working continues on the next page.**

10. continued.

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

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**Turn over**

11. (a) Simplify

$$r \times r \times r \times r \times r \times r$$

(1 mark)

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(b) Simplify

$$2q^3 + 5q^3 - q^3$$

(1 mark)

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(continued on the next page)

Turn over

**11. continued.**

**(c) Expand**  
 **$n(n + 5)$**   
**(1 mark)**

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**(d) Factorise**  
 **$9y - 12$**   
**(1 mark)**

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**(continued on the next page)**

**Turn over**

**11. continued.**

**Rosanna sells  $m$  small bags of marbles and  $p$  large bags of marbles.**

**Each small bag contains 15 marbles.**

**Each large bag contains 40 marbles.**

**The total number of marbles that Rosanna sells is  $T$**

**(e) Write down a formula for  $T$  in terms of  $m$  and  $p$**

**(3 marks)**

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

**Turn over**

11. (e) continued.

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**(Total for Question 11 is 7 marks)**

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**Turn over**

**12. Ingrid buys a bag in Sweden.**

**The price of the bag is**

**1342 Swedish Krona.**

**The price of an identical bag in**

**Finland is 125 euros.**

**(continued on the next page)**

**12. continued.**

**Using an exchange rate of**

**1 euro = 11 Swedish Krona**

**work out how much cheaper the bag  
is in Sweden than it is in Finland.**

**You must give the units of your  
answer.**

**(3 marks)**

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

**Turn over**

12. continued.

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**(Total for Question 12 is 3 marks)**

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**Turn over**

13. Hazel is buying a snack and a drink. She can have a bar of chocolate (B) or some fruit (F) or a packet of crisps (C) as her snack.

She can have orange juice (O) or apple juice (A) or water (W) as her drink.

Write down all the possible combinations Hazel can have.

(2 marks)

Answer lines continue on the next page.

**13. continued.**

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**(Total for Question 13 is 2 marks)**

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**Turn over**

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

It shows shape **A** and shape **B** on a grid.

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

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

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(continued on the next page)

Turn over

**14. continued.**

- (b) On the grid in the Diagram Booklet, reflect shape **A** in the line with equation  $x = -1$  (2 marks)**

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

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15. Use your calculator to work out the value of

$$\frac{5 \cdot 21 + 6 \cdot 37}{9 \cdot 8} + 8 \cdot 3^2$$

Write down all the figures on your calculator display.

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(Total for Question 15 is 2 marks)

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Turn over

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

**It shows an incomplete Venn diagram.**

$$\mathcal{E} = \{1, 2, 3, 4, 5, 6, 7, 8, 9, 10\}$$

$$A = \{2, 3, 7, 8, 9\}$$

$$B = \{1, 2, 4, 5, 7, 8, 10\}$$

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

**(Total for Question 16 is 3 marks)**

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17. Below are six integers where

$$w < x < y < z$$

w            x            y            z            z            z

The mode of the integers is 9

The median of the integers is 8

The range of the integers is 4

Work out the value of  $w$ , the value of  $x$ , the value of  $y$  and the value of  $z$   
(3 marks)

Answer space continues on the next two pages.

Turn over

17. continued.

Turn over

17. continued.

**w** = \_\_\_\_\_

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

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

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

**(Total for Question 17 is 3 marks)**

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**Turn over**

**18. (a) Look at the diagram for Question 18 in the Diagram Booklet.**

**It shows a grid.**

**On the grid, draw and label with its equation the straight line with equation**

**(i)  $y = 1$**

**(ii)  $x = 2$**

**(iii)  $x + y = 7$**

**(3 marks)**

**(continued on the next page)**

**Turn over**

18. continued.

(b) Show, on the grid in the Diagram Booklet, the region that satisfies **ALL THREE** of the inequalities below

$$y \geq 1$$

$$x \geq 2$$

$$x + y \leq 7$$

Label the region **R**

(1 mark)

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

---

Turn over

19. An aeroplane travelled from New York City to Los Angeles.

The aeroplane travelled a distance of **3980** kilometres in **5 hours 24** minutes.

Work out the average speed of the aeroplane.

Give your answer in kilometres per hour correct to the nearest whole number.

(3 marks)

Answer space is on the next two pages.

19. continued.

Turn over

19. continued.

\_\_\_\_\_ kilometres per hour

**(Total for Question 19 is 3 marks)**

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**Turn over**

20. Show that

$$5\frac{1}{3} - 2\frac{6}{7} = 2\frac{10}{21}$$

(3 marks)

Answer space continues on the next page.

Turn over

**20. continued.**

**(Total for Question 20 is 3 marks)**

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**Turn over**

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

**It is NOT accurately drawn.**

**It shows an 8-sided  
shape **ABCDEFGH****

**HG = 28 cm**

**AH = FG = 12 cm**

**AB = EF = 5 cm**

**The height of the shape is 20 cm**

**CD is parallel to HG**

**AH is parallel to FG**

**All the marked angles are right  
angles.**

**(continued on the next page)**

**Turn over**

21. continued.

The area of shape **ABCDEFGH** is  
**434 cm<sup>2</sup>**

Find the length of **CD**

(4 marks)

Answer space continues on the next  
two pages.

21. continued.

Turn over

21. continued.

\_\_\_\_\_ cm

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

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**Turn over**

**22. Look at the diagram for Question 22 in the Diagram Booklet.**

**It is NOT accurately drawn.**

**It shows triangle PQR**

$$\mathbf{PR = 9.5 \text{ cm}}$$

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

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

**Angle PQR is a right angle.**

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

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

**(3 marks)**

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

**Turn over**

**22. continued.**

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

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

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**Turn over**

**23. Change a speed of  
81 kilometres per hour to a speed in  
metres per second.**

**(3 marks)**

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

**23. continued.**

\_\_\_\_\_ metres per second

**(Total for Question 23 is 3 marks)**

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**Turn over**

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

**Work out what fraction of the  
300 celebration cards have numbers  
on them.**

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

**(5 marks)**

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

**24. continued.**

**Turn over**

24. continued.

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

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**Turn over**

**25. Pasha invests 50 000 dollars in a savings account for 4 years.**

**He gets 1.3% per year compound interest.**

**Work out how much money Pasha will have in his savings account at the end of 4 years.**

**Give your answer correct to the nearest dollar.**

**(3 marks)**

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

25. continued.

Turn over

25. continued.

\_\_\_\_\_ dollars

**(Total for Question 25 is 3 marks)**

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**Turn over**

**26. Solve the simultaneous equations**

$$7x + 3y = 3$$

$$3x - y = 7$$

**Show clear algebraic working.**

**(3 marks)**

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

26. continued.

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

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

**(Total for Question 26 is 3 marks)**

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**Turn over**

27. (i) Factorise

$$x^2 + 5x - 24$$

(2 marks)



(continued on the next page)

Turn over

**27. continued.**

**(ii) Hence, solve**

$$\mathbf{x^2 + 5x - 24 = 0}$$

**(1 mark)**

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**(Total for Question 27 is 3 marks)**

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**Turn over**

28. Larry is a delivery man.

He has 7 parcels to deliver.

The mean weight of the 7 parcels is

$2.7$  kg

Larry delivers 3 of the parcels.

Each of these 3 parcels has a

weight of  $W$  kg

The mean weight of the other

4 parcels is  $3.3$  kg

Work out the value of  $W$

(3 marks)

Answer space is on the next two

pages.

Turn over

28. continued.

Turn over

28. continued.

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

**(Total for Question 28 is 3 marks)**

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**TOTAL FOR PAPER IS 100 MARKS**

**END OF PAPER**

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