Paper Reference 4MA1/2F
Pearson Edexcel
International GCSE

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	

V68797RA

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

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.

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.

Answer **ALL TWENTY EIGHT** questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

1. (a) Write

   $0 \cdot 3$ as a percentage.

   (1 mark)

   _____ %

   (b) Write

   $\dfrac{29}{100}$ as a decimal.

   (1 mark)

   _____

(continued on the next page)

Turn over

1.   continued.

(c)   Write

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

(1 mark)

_____

(continued on the next page)

1. continued.

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

   Start with the smallest number.

   -7 8 -9 16 -3

   (1 mark)

_____

_____

(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)

_____

_____

(continued on the next page)

1.   continued.

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

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

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

(2 marks)

_____

(Total for Question 1 is 7 marks)

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)

2. **continued.**

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

       (1 mark)

_____ **cm^2**

(Total for Question 2 is 5 marks)

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)

_____

(continued on the next page)

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)

_____

_____

(continued on the next page)

3.   continued.

Remember:

Below are the first five terms of a number sequence.

7   13   19   25   31

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

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

(1 mark)

Answer space continues on the next page.

3. **(b)** **continued.**

_____

(continued on the next page)

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.**

_____

_____

_____

(Total for Question 3 is 4 marks)

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)

_____

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)

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)

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)

       _____

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

              than 9

              (1 mark)

       _____

(Total for Question 5 is 4 marks)

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.

6. **continued.**

6. **continued.**

$_____

(Total for Question 6 is 4 marks)

7.   A circle has radius **6·5 cm**

Calculate the circumference of the circle.

Give your answer correct to

3 significant figures.

_____ **cm**

(Total for Question 7 is 2 marks)

Turn over

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.**

(Total for Question 8 is 3 marks)

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.

9.   continued.

9. **continued.**

X = _____

(Total for Question 9 is 4 marks)

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)

Turn over

11. (a) Simplify

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

(1 mark)

_____

(b) Simplify

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

(1 mark)

_____

(continued on the next page)

Turn over

11. **continued.**

(c) **Expand**

n(n + 5)

(1 mark)

_____

(d) **Factorise**

9y – 12

(1 mark)

_____

(continued on the next page)

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.

11. (e) continued.

(Total for Question 11 is 7 marks)

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.

12. continued.

(Total for Question 12 is 3 marks)

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.

_____

_____

_____

(Total for Question 13 is 2 marks)

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)

_____

_____

_____

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)

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.

(Total for Question 15 is 2 marks)

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

It shows an incomplete Venn diagram.

$\mathscr{E}$ = {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)

Turn over

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.

17. continued.

17. continued.

w = _____

x = _____

y = _____

z = _____

(Total for Question 17 is 3 marks)

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)

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)

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.

19. continued.

_____ **kilometres per hour**

(Total for Question 19 is 3 marks)

20. **Show that**

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

(3 marks)

Answer space continues on the next page.

20. **continued.**

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^2

Find the length of **CD**

(4 marks)

Answer space continues on the next two pages.

21. **continued.**

21. continued.

_____ **cm**

(Total for Question 21 is 4 marks)

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

It is NOT accurately drawn.

It shows triangle **PQR**

PR = 9·5 cm

PQ = x cm

Angle **QPR** = 42°

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)

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)

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.

24. continued.

(Total for Question 24 is 5 marks)

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.

25. **continued.**

_____ **dollars**

(Total for Question 25 is 3 marks)

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)

Turn over

27. (i) Factorise

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

(2 marks)

_____

(continued on the next page)

Turn over

27. continued.

(ii) Hence, solve

$$x^2 + 5x - 24 = 0$$

(1 mark)

_____

(Total for Question 27 is 3 marks)

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.

28. continued.

28. continued.

W = _____

(Total for Question 28 is 3 marks)

TOTAL FOR PAPER IS 100 MARKS

END OF PAPER