

Paper Reference 4MA1/2F
Pearson Edexcel
International GCSE

Total Marks

Mathematics A
PAPER 2F
Foundation Tier
(Calculator)

Time: 2 hours plus your additional time allowance

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.

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.

ADVICE

Read each question carefully before you start to answer it.

Check your answers if you have time at the end.

Answer ALL TWENTY SIX questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

1. Look at the diagram for Question 1 in the Diagram Booklet.

It shows a pictogram which gives information about the number of ice creams Sandeep sold on each of four days last week.

- (a) How many ice creams did Sandeep sell on Thursday?

(1 mark)

Sandeep sold **30** ice creams on Friday.

- (b) Complete the pictogram in the Diagram Booklet to show the number of ice creams Sandeep sold on Friday.

(1 mark)

(continued on the next page)

1. continued.

(c) On which day was the least number of ice creams sold?

(1 mark)

(d) Work out the total number of ice creams Sandeep sold last week.

(2 marks)

(Total for Question 1 is 5 marks)

2. (a) Write these five numbers in order of size.
Start with the smallest number.

2·12 2·19 2·07 2·1 2·001

(1 mark)

- (b) Write down the value of 6 in the number
54·623

(1 mark)

(continued on the next page)

2. continued.

(c) Write the number 3.4896 correct to
2 decimal places.

(1 mark)

(d) Write 0.6 as a percentage.

(1 mark)

_____ %

(Total for Question 2 is 4 marks)

3. (a) Simplify $4y + 5y - 2y$
(1 mark)
-

- (b) Simplify $4p \times 7$
(1 mark)
-

(Total for Question 3 is 2 marks)

4. (a) Change

5.48 metres into centimetres.

(1 mark)

_____ **cm**

(b) Change

4600 millilitres into litres.

(1 mark)

_____ **litres**

(continued on the next page)

4. continued.

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

It is NOT accurately drawn.

It shows an isosceles triangle **ABC**

AC = 5 cm

The perimeter of the triangle is **32 cm**

(c) Work out the length of **AB**

(2 marks)

_____ cm

(Total for Question 4 is 4 marks)

5. Adisha plays basketball for her school.

Here is the number of points that she scored in each of nine games.

15 16 15 18 17
15 13 19 18

(a) Find the mode of the numbers of points that Adisha scored.

(1 mark)

(continued on the next page)

5. continued.

Remember: here is the number of points that she scored in each of nine games.

15	16	15	18	17
15	13	19	18	

(b) Work out the range of the numbers of points that Adisha scored.

(2 marks)

(Total for Question 5 is 3 marks)

6. Here are the first four terms of a number sequence.

4 8 12 16

(a) Write down the next term of the sequence.

(1 mark)

(b) Explain how you found your answer to part (a).

(1 mark)

(c) Find an expression, in terms of n , for the n th term of the sequence.

(1 mark)

(Total for Question 6 is 3 marks)

7. Look at the information for Question 7 in the Diagram Booklet.

Carmel is working out the cost of using her mobile phone in March.

The information in the Diagram Booklet is what she uses.

Work out the total cost that Carmel has to pay for using her mobile phone in March.

(4 marks)

Answer space continues on the next page.

7. continued.

\$ _____

(Total for Question 7 is 4 marks)

Turn over

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

It is NOT accurately drawn.

It shows a rhombus, **ABCD**

Angle **BAD** = 122°

Angle **ADC** = x°

Work out the value of **x**

Give a reason for your answer.

(3 marks)

Answer space continues on the next page.

8. continued.

x = _____

(Total for Question 8 is 3 marks)

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

It is NOT accurately drawn.

It shows a cuboid with length 12 cm, width 6 cm and height 9 cm

Work out the volume of the cuboid.

_____ cm^3

(Total for Question 9 is 2 marks)

10. (a) Write **25** as a fraction of **145**

Give your fraction in its simplest form.

(2 marks)

(b) Work out **9** as a percentage of **25**

(2 marks)

_____ %

(continued on the next page)

10. continued.

The cost of **16** sandwiches of the same type is **28** euros.

(c) Work out the cost of **27** of these sandwiches.
(2 marks)

_____ euros

(Total for Question 10 is 6 marks)

11. Look at the diagram for Question 11 in the Diagram Booklet.

It shows line **AB**

ABC is a triangle.

$$AB = 9 \text{ cm}$$

$$AC = 6 \text{ cm}$$

$$BC = 8 \text{ cm}$$

Use ruler and compasses to construct triangle **ABC** with **AB** as its base.

You must show all construction lines.

The line **AB** has been drawn for you.

(Total for Question 11 is 2 marks)

12. Given that

$$T = 6p - 4w$$

- (a) work out the value of T when $p = 8$ and $w = 3$
(2 marks)

$$T = \underline{\hspace{10em}}$$

(continued on the next page)

12. continued.

Given that

$$T = 6p - 4w$$

(b) work out the value of p when $T = -41$ and

$$w = 5$$

(3 marks)

$$p = \underline{\hspace{10em}}$$

(continued on the next page)

12. continued

(c) Solve $4(y - 3) = 7y + 15$

Show clear algebraic working.

(3 marks)

$y =$ _____

(Total for Question 12 is 8 marks)

13. Trains leave Agra station to go to New Delhi every 40 minutes.

Trains leave Agra station to go to Mumbai every 48 minutes.

At 6 am a train leaves Agra station to go to New Delhi and at the same time a train leaves Agra station to go to Mumbai.

Work out the next time a train leaves Agra station to go to New Delhi and at the same time a train leaves Agra station to go to Mumbai.

(3 marks)

Answer space continues on the next page.

13. continued.

(Total for Question 13 is 3 marks)

Turn over

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

On the grid in the Diagram Booklet, draw the graph of

$$y = 1 - 3x \text{ for values of } x \text{ from } -2 \text{ to } 3$$

(Total for Question 14 is 3 marks)

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

It shows an incomplete Venn diagram.

$$\mathcal{E} = \{2, 4, 6, 8, 10, 12, 14, 16, 18\}$$

$$X = \{4, 8, 12, 16\}$$

$$Y = \{6, 12, 18\}$$

(a) Complete the Venn diagram in the Diagram Booklet for this information.

(3 marks)

(continued on the next page)

15. continued.

Remember:

$$\mathcal{E} = \{2, 4, 6, 8, 10, 12, 14, 16, 18\}$$

$$X = \{4, 8, 12, 16\}$$

$$Y = \{6, 12, 18\}$$

A number is chosen at random from \mathcal{E}

- (b) Find the probability that the number is in the set $X \cup Y$
(2 marks)

(Total for Question 15 is 5 marks)

16. Ravina leaves her home at **1 35 pm** in her car.

Ravina drives **60 km** from her home to get to an appointment.

She drives at an average speed of **80 km/h**.

At what time does Ravina get to her appointment?

(3 marks)

Answer space continues on the next page.

16. continued.

(Total for Question 16 is 3 marks)

17. (a) Write down the value of m , given that

$$3^4 \times 3^5 = 3^m$$

(1 mark)

$$m = \underline{\hspace{4cm}}$$

(b) Write down the value of n , given that

$$(5^3)^7 = 5^n$$

(1 mark)

$$n = \underline{\hspace{4cm}}$$

(continued on the next page)

17. continued.

(c) Find the value of p , given that

$$\frac{7^8 \times 7^2}{7^p} = 7^6$$

(2 marks)

$p =$ _____

(Total for Question 17 is 4 marks)

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

It is NOT accurately drawn.

It shows two rectangles, rectangle **A** and rectangle **B**

Rectangle **A** has length **4 cm** and width **$(5 - x)$ cm**

Rectangle **B** has length **5 cm** and width **$(2x - 1)$ cm**

The area of rectangle **B** is twice the area of rectangle **A**

Work out the value of **x**

Show your working clearly.

(4 marks)

Answer space continues on the next page.

18. continued.

x = _____

(Total for Question 18 is 4 marks)

Turn over

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

It gives information about the amounts of money, in euros, that 70 of Anjali's friends spent last Saturday.

One of Anjali's 70 friends is going to be chosen at random.

(a) Find the probability that this friend spent more than 24 euros last Saturday.

(1 mark)

(continued on the next page)

19. continued.

- (b) Work out an estimate for the mean amount of money spent by Anjali's friends last Saturday. Give your answer correct to 2 decimal places. (4 marks)**

Answer space continues on the next page.

19. (b) continued.

_____ euros

(Total for Question 19 is 5 marks)

20. Look at the diagram for Question 20 in the Diagram Booklet.

It is NOT accurately drawn.

It shows two similar triangles **ABC** and **DEF**

In triangle **ABC**, **AC = 45 cm**

In triangle **DEF**, **DE = 36 cm** and **DF = 20 cm**

Angle **BAC** = angle **EDF**

Angle **BCA** = angle **EFD**

(a) Work out the length of **AB**

(2 marks)

_____ cm

(continued on the next page)

Turn over

20. continued.

Given that $BC = 54$ cm,

(b) work out the length of EF
(2 marks)

_____ cm

(Total for Question 20 is 4 marks)

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

It is NOT accurately drawn.

It shows a regular octagon **ABCDHIJK** and a pentagon **DEFGH**

Angle **GHD** = angle **FGH**

Angle **EDH** = 112°

Angle **DEF** = 102°

Angle **EFG** = 96°

The exterior angle **GHI** is marked **x**

Work out the size of the angle marked **x**

Show your working clearly.

(5 marks)

Answer space continues on the next page.

21. continued.

○

(Total for Question 21 is 5 marks)

Turn over

22. Victor buys 12 bottles of apple juice for a total cost of \$21

Victor sells all 12 bottles at \$2.45 each bottle.

Work out Victor's percentage profit.

(3 marks)

Answer space continues on the next page.

22. continued.

_____ %

(Total for Question 22 is 3 marks)

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

It provides information about two banks.

Ali and Badia each have 25 000 dollars to invest.

Ali invests in the Cyclone Bank for 3 years.

Badia invests in the Tornado Bank for 3 years.

By the end of the 3 years, Ali will have received more interest than Badia.

How much more?

Show your working clearly.

Give your answer correct to the nearest dollar.

(4 marks)

Answer space continues on the next two pages.

23. continued.

23. continued.

_____ dollars

(Total for Question 23 is 4 marks)

24. (a) Simplify

$$(3x^2y)^0$$

(1 mark)

(b) (i) Factorise

$$y^2 - 5y - 36$$

(2 marks)

(continued on the next page)

Turn over

24. (b) continued.

(ii) Hence solve

$$y^2 - 5y - 36 = 0$$

(1 mark)

(Total for Question 24 is 4 marks)

25. A rainwater tank contains 2.4×10^7 raindrops.
The rainwater tank also contains
 1.75×10^6 bacteria.

Work out the number of bacteria per raindrop in the tank.

Give your answer in standard form correct to 2 significant figures.

(3 marks)

Answer space continues on the next page.

25. continued.

(Total for Question 25 is 3 marks)

26. Look at the diagram for Question 26 in the Diagram Booklet.

It is NOT accurately drawn.

ABC is an isosceles triangle with **BA = BC**

Angle **BAN** = 38°

N is the point on **AC** such that **AN = 9.3 cm** and **BN** is perpendicular to **AC**

Work out the perimeter of triangle **ABC**

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

(4 marks)

Answer space continues on the next page.

26. continued.

_____ cm

(Total for Question 26 is 4 marks)

TOTAL FOR PAPER IS 100 MARKS

END OF PAPER
