

Paper Reference 1MA1/2F
Pearson Edexcel
Level 1/Level 2 GCSE (9–1)

Total Marks

Mathematics
Paper 2
(Calculator)
Foundation Tier

Thursday 6 June 2019 – Morning

Time: 1 hour 30 minutes plus your additional time allowance.

In the boxes below, write your name, centre number and candidate number.

Surname					
Other names					
Centre Number					
Candidate Number					

X54227A

YOU MUST HAVE

Ruler, protractor, compasses, writing and drawing equipment, calculator. Tracing paper may be used.

YOU WILL BE GIVEN

Diagram Book

INSTRUCTIONS

Answer ALL questions.

Answer the questions in the spaces provided in this Question Paper or on the separate diagrams – there may be more space than you need.

You must SHOW ALL YOUR WORKING.

Diagrams and models are NOT accurate unless otherwise indicated.

CALCULATORS MAY BE USED.

If your calculator does not have a π button, take the value of π to be 3.142 unless the question instructs otherwise.

INFORMATION

The total mark for this paper is 80

**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.

ADVICE

**Read each question carefully before you start to
answer it.**

Keep an eye on the time.

Try to answer every question.

Check your answers if you have time at the end.

Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

1. Write 0.75 as a fraction.

(Total for Question 1 is 1 mark)

2. Write the following five numbers in order of size.
Start with the smallest number.

-3 4 0 -1 2

(Total for Question 2 is 1 mark)

3. Write down two factors of 15

(Total for Question 3 is 1 mark)

4. Change 1756 grams to kilograms.

_____ kg

(Total for Question 4 is 1 mark)

5. Write the number two million in figures.

(Total for Question 5 is 1 mark)

6. Dave goes into a cafe and buys 2 cups of coffee and a piece of cake.

Each cup of coffee costs £2.75

The cake costs £2.90

Dave pays with a £10 note.

He thinks he will get more than £1.50 in change.

Is Dave correct?

You must show how you get your answer.

(3 marks)

Answer space continues on the next page.

6. continued.

(Total for Question 6 is 3 marks)

Turn over

7. There are y boats on a lake.
There are 7 people in each boat.

Write an expression, in terms of y , for the total number of people in the boats.

(Total for Question 7 is 1 mark)

8. (a) Simplify

$$m \times n \times 7$$

(1 mark)

(b) Simplify

$$y \times y \times y$$

(1 mark)

(continued on the next page)

8. continued.

(c) Simplify fully

$$\frac{e \times e \times e \times f}{e \times e \times f \times f}$$

(2 marks)

(Total for Question 8 is 4 marks)

- 9. Look at the diagram for Question 9 in the Diagram Book.**

The incomplete pictogram shows information about the number of vinyl records sold in a shop on Monday and on Tuesday.

- (a) Write down the number of vinyl records sold**

(i) on Monday,

(1 mark)

(ii) on Tuesday.

(1 mark)

(continued on the next page)

9. continued.

On Wednesday and Thursday a total of 36 vinyl records were sold.

The number of records sold on Thursday was 8 times the number of records sold on Wednesday.

**(b) Use this information to complete the pictogram.
(3 marks)**

(Total for Question 9 is 5 marks)

10. Here are three symbols.

$<$ $>$ $=$

Write one of these symbols in each box to make four true statements.

$$14 \quad \boxed{} \quad 21$$

$$4 + 7 \quad \boxed{} \quad 103 - 92$$

$$2^2 \quad \boxed{} \quad 2 \times 2$$

$$-3 \quad \boxed{} \quad -5$$

(Total for Question 10 is 2 marks)

11. Work out the value of P when $r = 5$ and $q = -4$
given that $P = 7r + 3q$

(Total for Question 11 is 2 marks)

12. Look at the table for Question 12 in the Diagram Book.

It shows part of a train timetable.

Graham gets to the station in Brighton at 07 15

(a) Work out how many minutes he has to wait until 07 22

(1 mark)

_____ minutes

(continued on the next page)

12. continued.

(b) Work out how long it will take the 07 22 train to get to London.

(2 marks)

(Total for Question 12 is 3 marks)

13. Look at the diagram for Question 13 in the Diagram Book.

It shows nine identical shaded squares inside a rectangle.

The length of the rectangle is 12 cm

Work out the width of the rectangle.

(3 marks)

Answer space continues on the next page.

13. continued.

_____ cm

(Total for Question 13 is 3 marks)

14. Write the ratio $4.5 : 2.25$ in the form $n : 1$

(Total for Question 14 is 1 mark)

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

It shows a garden in the shape of a rectangle 90 metres by 60 metres.

Flowers are grown in 40% of the garden.

The rest of the garden is grass.

Work out the area of the garden that is grass.

(4 marks)

Answer space continues on the next page.

15. continued.

_____ m²

(Total for Question 15 is 4 marks)

16. Look at the table for Question 16 in the Diagram Book.

Four biased coins, A, B, C and D are thrown.

The probability that each coin will land on Heads is shown in the table.

- (a) (i) Which coin is least likely to land on Heads?
(1 mark)**

- (ii) Which coin is most likely to land on Heads?
(1 mark)**

(continued on the next page)

16. continued.

Julie says,

“The probability that coin **C** will land on Heads is the same as the probability that coin **C** will land on Tails.”

(b) Is she correct?

Give a reason for your answer.

(1 mark)

(continued on the next page)

16. continued.

Coin **B** is going to be thrown **4000** times.

(c) Work out an estimate for the number of times
coin **B** will land on Heads.

(2 marks)

(Total for Question 16 is 5 marks)

17. There are **84** calories in **100** grams of banana.
There are **87** calories in **100** grams of yogurt.

Priti has **60** grams of banana and **150** grams of yogurt for breakfast.

Work out the total number of calories in this breakfast.

(4 marks)

Answer space continues on the next page.

17. continued.

(Total for Question 17 is 4 marks)

18. Machine **A** and machine **B** both make car parts.

Machine **A** makes **6** parts every **10** minutes.

Machine **B** makes **13** parts every **15** minutes.

On Monday

machine **A** makes parts for **12** hours

machine **B** makes parts for **10** hours

Work out the total number of parts made by the two machines on Monday.

(4 marks)

Answer space continues on the next two pages.

18. continued.

18. continued.

(Total for Question 18 is 4 marks)

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

It shows a plan of a kitchen drawn to a scale of 1 : 30

Sam is going to put a small table in the kitchen.

**The table has to be
more than 180 cm from A
more than 150 cm from BC**

Show, by shading on the diagram, the region where Sam can put the table.

(Total for Question 19 is 4 marks)

20. (a) Solve

$$14n > 11n + 6$$

(2 marks)

(continued on the next page)

20. continued.

(b) Look at the diagram for Question 20(b) in the Diagram Book.

On the number line, show the set of values of x for which $-2 < x + 3 \leq 4$

(3 marks)

(Total for Question 20 is 5 marks)

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

On the grid, draw the graph of $y = 2x - 3$ for values of x from -2 to 4

(Total for Question 21 is 3 marks)

22. Look at the table for Question 22 in the Diagram Book.

Hannah is planning a day trip for 195 students.

She asks a sample of 30 students where they want to go.

Each student chooses one place.

The table shows information about her results.

- (i) Work out how many of the 195 students you think will want to go to the Theme Park.
(2 marks)**

Answer space continues on the next page.

22. (i) continued.

(ii) State any assumption you made AND explain how this may affect your answer.

(1 mark)

(Total for Question 22 is 3 marks)

23. Look at the diagram for Question 23 in the Diagram Book.

It shows a container in the shape of a cuboid, with length 30 cm, width 6 cm, and height 19 cm

The container is $\frac{2}{3}$ full of water.

A cup holds 275 ml of water.

**What is the greatest number of cups that can be completely filled with water from the container?
(4 marks)**

Answer space continues on the next page.

23. continued.

(Total for Question 23 is 4 marks)

Turn over

24. Look at the diagram for Question 24 in the Diagram Book.

ABC is a right-angled triangle.

AC = 16 cm

Angle **ACB** = 38°

Angle **ABC** is a right angle.

Calculate the length of **AB**

Give your answer correct to **2** decimal places.

(2 marks)

Answer space continues on the next page.

24. continued.

_____ cm

(Total for Question 24 is 2 marks)

25. Sally used her calculator to work out the value of a number y

The answer on her calculator display began

8.3

Complete the error interval for y

_____ $\leq y <$ _____

(Total for Question 25 is 2 marks)

26. **£360** is shared between Abby, Ben, Chloe and Denesh.

The ratio of the amount Abby gets to the amount Ben gets is **2 : 7**

Chloe and Denesh each get **1.5** times the amount Abby gets.

Work out the amount of money that Ben gets.
(4 marks)

Answer space continues on the next page.

26. continued.

£ _____

(Total for Question 26 is 4 marks)

Turn over

27. (a) Write

0.00562 in standard form.

(1 mark)

(b) Write

1.452×10^3 as an ordinary number.

(1 mark)

(Total for Question 27 is 2 marks)

28. Here are the first five terms of a Fibonacci sequence.

3 3 6 9 15

**(a) Write down the next two terms of the sequence.
(1 mark)**

_____ , _____

The first three terms of a different Fibonacci sequence are

a a 2a

**(b) Find the 6th term of this sequence.
(2 marks)**

Answer space continues on the next page.

28. (b) continued.

(Total for Question 28 is 3 marks)

29.

$$\mathbf{a} = \begin{pmatrix} 4 \\ 5 \end{pmatrix}$$

$$\mathbf{b} = \begin{pmatrix} 3 \\ 2 \end{pmatrix}$$

Work out $\mathbf{a} - 2\mathbf{b}$ as a column vector.

$$\begin{pmatrix} \\ \\ \end{pmatrix}$$

(Total for Question 29 is 2 marks)

TOTAL FOR PAPER IS 80 MARKS

END OF PAPER
