

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

Total Marks

Mathematics

Paper 1

(Non–Calculator)

Foundation Tier

Tuesday 21 May 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					

Y54155A

YOU MUST HAVE

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

YOU WILL BE GIVEN

Diagram Book

Turn over

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 NOT BE USED.

Turn over

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.

You may be provided with a model for Question 25

There may be spare copies of some diagrams.

Turn over

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.

Turn over

6

Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

Turn over

7

1. Write 180 minutes in hours.

_____ **hours**

(Total for Question 1 is 1 mark)

Turn over

8

2. Write 0.73 as a percentage.

_____ %

(Total for Question 2 is 1 mark)

Turn over

3. Work out

$$10 \times (3 + 5)$$

(Total for Question 3 is 1 mark)

Turn over

10

- 4. Write down a prime number that is between 20 and 30**

(Total for Question 4 is 1 mark)

Turn over

11

- 5. Find the number that is exactly halfway between 7 and 15**

(Total for Question 5 is 1 mark)

Turn over

- 6. Look at the information for Question 6 in the Diagram Book.**
- Harry is planning a holiday for 4 people for 7 days.**

The information shows the costs for the holiday for EACH PERSON.

Work out the total cost of the holiday for 4 people for 7 days.

(4 marks)

Answer space continues on the next two pages.

Turn over

6. continued.

Turn over

6. continued.

£ _____

(Total for Question 6 is 4 marks)

Turn over

- 7. Look at the diagram for Question 7 in the Diagram Book.**

In Adam's garden, the flowers are only red or white or yellow or blue.

The chart shows the number of red flowers, the number of white flowers and the number of yellow flowers.

The total number of flowers is 30

(continued on the next page)

7. continued.

(a) Work out the number of blue flowers.

(2 marks)

Answer space is on the next page.

Turn over

7. (a) continued.

(continued on the next page)

Turn over

7. continued.

(b) Write down the mode.

(1 mark)

(Total for Question 7 is 3 marks)

Turn over

8. Write the following five fractions in order of size.

Start with the smallest fraction.

$$\frac{1}{3} \quad \frac{3}{4} \quad \frac{1}{4} \quad \frac{7}{12} \quad \frac{1}{2}$$

(2 marks)

Answer space continues on the next page.

Turn over

8. continued.

(Total for Question 8 is 2 marks)

Turn over

9. Ruth left her home at 9 am and walked to the library.

She got to the library at 10 30 am

Ruth walked at a speed of 4 mph

- (a) Work out the distance Ruth walked.

(2 marks)

_____ miles

(continued on the next page)

Turn over

9. continued.

Ruth got to the library at 10 30 am

**She stayed at the library for
50 minutes.**

Then she walked home.

Ruth took $1\frac{1}{4}$ hours to walk home.

**(b) At what time did Ruth get home?
(2 marks)**

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

Turn over

9. (b) continued.

(Total for Question 9 is 4 marks)

Turn over

10. (a) Solve

$$t + t + t = 12$$

(1 mark)

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

(continued on the next page)

Turn over

10. continued.

(b) Solve

$$\mathbf{x - 2 = 6}$$

(1 mark)

x = _____

(continued on the next page)

Turn over

10. continued.

(c) Solve

$$6w + 2 = 20$$

(2 marks)

W = _____

(Total for Question 10 is 4 marks)

Turn over

11. Work out

$$74 \times 58$$

(2 marks)

Answer space continues on the next page.

Turn over

11. continued.

(Total for Question 11 is 2 marks)

Turn over

12. Look at the diagram for
Question 12(a) in the Diagram Book.
AB and **BC** are perpendicular lines.
Two angles are marked 25°
One angle is marked x°

- (a) Find the value of the angle
marked x°
(2 marks)

x = _____

(continued on the next page)

Turn over

12. continued.

**Look at the diagram for
Question 12(b) in the Diagram Book.**

RS and TU are parallel lines.

PQ is a straight line.

**An angle of size 125° is shown on
the diagram.**

Angles **v, **w**, **x**, **y** and **z** are also
shown on the diagram.**

(continued on the next page)

Turn over

12. continued.

(b) (i) Write down the letter of one other angle of size 125°

Give a reason for your answer.

(2 marks)

(continued on the next page)

Turn over

12. (b) continued.

(ii) Explain why

$$\mathbf{v + w + x = 235^{\circ}}$$

(1 mark)

(Total for Question 12 is 5 marks)

Turn over

13. The length of a line is X centimetres.

Write down an expression, in terms of X , for the length of the line in millimetres.

(Total for Question 13 is 1 mark)

Turn over

14. (a) Work out

$$\frac{1}{5} \text{ of } 70$$

(1 mark)

(continued on the next page)

Turn over

14. continued.

Fiona has to work out the exact value

of $48 \div \frac{1}{2}$

She writes

$$48 \div \frac{1}{2} = 24$$

Fiona's reason is,

“There are 2 halves in 1, so there will be 24 halves in 48”

(continued on the next page)

Turn over

14. continued.

**(b) Explain what is wrong with
Fiona's reason.**

(1 mark)

(Total for Question 14 is 2 marks)

Turn over

15. (a) Write down the value of $\sqrt{64}$
(1 mark)

- (b) Work out the value of 5^3
(1 mark)

(Total for Question 15 is 2 marks)

Turn over

- 16. (a) Expand**
 $5(2m - 3)$
(1 mark)
-

(continued on the next page)

Turn over

16. continued.

(b) Factorise

$$3n + 12$$

(1 mark)

(Total for Question 16 is 2 marks)

Turn over

17. **Stuart throws a biased coin 10 times.
He gets 7 Tails.**

**Maxine throws the same coin
50 times.
She gets 30 Tails.**

**Prasha is going to throw the coin
once.**

(continued on the next page)

17. continued.

- (i) Whose results will give the better estimate for the probability that she will get Tails, Stuart's or Maxine's?**

You must give a reason for your answer.

(1 mark)

(continued on the next page)

Turn over

17. continued.

(ii) Use Stuart's and Maxine's results to work out an estimate for the probability that Prasha will get Tails.

(1 mark)

(Total for Question 17 is 2 marks)

Turn over

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

It shows a rectangular garden path, 600 cm long and 120 cm wide.

Wasim is going to cover the path with paving stones.

Each paving stone is a square of side 30 cm

Each paving stone costs £2.50

(continued on the next page)

18. continued.

Wasim has £220 to spend on paving stones.

Show that he has enough money to buy all the paving stones he needs.

(4 marks)

Answer space continues on the next two pages.

Turn over

18. continued.

Turn over

18. continued.

(Total for Question 18 is 4 marks)

Turn over

19. (a) Work out

$$\frac{2}{3} - \frac{1}{5}$$

(2 marks)

(continued on the next page)

Turn over

19. continued.

(b) Work out

$$\frac{2}{3} \times \frac{3}{4}$$

Give your answer as a fraction in its simplest form.

(2 marks)

Answer space continues on the next page.

Turn over

19. (b) continued.

(Total for Question 19 is 4 marks)

Turn over

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

It shows two squares, A and B

The length of the side of square A is 50% of the length of the side of square B

**Express the area of the shaded region of square A as a percentage of the area of square B
(3 marks)**

Answer space continues on the next two pages.

20. continued.

Turn over

20. continued.

_____ %

(Total for Question 20 is 3 marks)

Turn over

**21. Look at the information for
Question 21 in the Diagram Book.**

**There are 40 students in a class.
Each student walks to school or
cycles to school or gets the bus to
school.**

**Find the number of these students
who walk to school.**

(4 marks)

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

Turn over

21. continued.

(Total for Question 21 is 4 marks)

Turn over

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

There are only blue cubes, red cubes and yellow cubes in a box.

The table shows the probability of taking at random a blue cube from the box.

(continued on the next page)

22. continued.

The number of red cubes in the box is the same as the number of yellow cubes in the box.

(a) Complete the table.

There are two spaces to fill.

(2 marks)

(continued on the next page)

Turn over

22. continued.

There are 12 blue cubes in the box.

**(b) Work out the total number of
cubes in the box.**

(2 marks)

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

Turn over

22. (b) continued.

(Total for Question 22 is 4 marks)

Turn over

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

Deon is going to make 60 biscuits.

**(a) Work out the amount of flour she
needs.**

(3 marks)

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

Turn over

23. (a) continued.

_____ **grams**

(continued on the next page)

Turn over

23. continued.

Deon has to buy all the butter she needs to make 60 biscuits.

She buys the butter in 250 gram packs.

(b) How many packs of butter does Deon need to buy?

(2 marks)

Answer space continues on the next page.

23. (b) continued.

(Total for Question 23 is 5 marks)

Turn over

**24. Find the highest common factor (HCF)
of 72 and 90**

(Total for Question 24 is 2 marks)

Turn over

25. Look at the diagrams for Question 25 in the Diagram Book.

You may be provided with a model.

Diagram 1 and the model show a cylinder.

They are not accurate.

Look at Diagram 2 below Diagram 1

Diagram 2 shows three options

labelled Option **A, Option **B** and**

Option **C on a grid of squares.**

Each square on the grid represents a one centimetre square.

(continued on the next page)

Turn over

25. continued.

The cylinder is placed with its flat face on a surface.



- (a) Which of the options, A, B or C, shows the plan of the cylinder?
(1 mark)**

(continued on the next page)

Turn over

25. continued.

(b) Remember:

**Each square on the grid
represents a one centimetre
square.**

Using Diagram 2,

**(i) write down the diameter of
the cylinder.**

_____ cm

(continued on the next page)

Turn over

25. (b) continued.

Remember:

**Each square on the grid
represents a one centimetre
square.**

**(ii) write down the height of the
cylinder.**

_____ **cm**

(1 mark)

(Total for Question 25 is 2 marks)

Turn over

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

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

(a) Reflect shape A in the x-axis.

Label the new shape X

(1 mark)

(continued on the next page)

26. continued.

(b) Shape **X** can be transformed to shape **B** by a translation $\begin{pmatrix} c \\ d \end{pmatrix}$

Find the value of **C** and the value of **d**

(2 marks)

c = _____

d = _____

(Total for Question 26 is 3 marks)

Turn over

- 27. Look at the information for Question 27 in the Diagram Book.**
- A shop sells packs of black pens, packs of red pens and packs of green pens.**

Work out the number of green pens sold.

(4 marks)

Answer space continues on the next two pages.

27. continued.

Turn over

27. continued.

(Total for Question 27 is 4 marks)

Turn over

28. Look at the diagram for Question 28 in the Diagram Book.

It shows two rectangles, ABCD and PQRS

$$\mathbf{PQ = 10\text{ cm}}$$

$$\mathbf{AD = PS}$$

The perimeter of ABCD is 26 cm

The area of PQRS is 45 cm^2

Find the length of AB

(4 marks)

Answer space is on the next two pages.

Turn over

28. continued.

Turn over

28. continued.

_____ **cm**

(Total for Question 28 is 4 marks)

Turn over

29. Look at the diagram for Question 29 in the Diagram Book.

It shows the graph of
 $y = x^2 - 2x - 3$

- (a) Write down the coordinates of the turning point on the graph of**
 $y = x^2 - 2x - 3$
(1 mark)

(_____ , _____)

(continued on the next page)

Turn over

29. continued.

- (b) Use the graph to find the roots of the equation $x^2 - 2x - 3 = 0$**
(2 marks)

(Total for Question 29 is 3 marks)

TOTAL FOR PAPER IS 80 MARKS

END OF PAPER
