

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

Total Marks

Mathematics
PAPER 1 (Non-Calculator)
Foundation Tier

Time: 1 hour 30 minutes

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, Formulae Sheet. Tracing paper may be used.

YOU WILL BE GIVEN

Diagram Booklet

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 are NOT accurately drawn, 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.**

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

**You may be provided with a shape for Question 11(b)
and a model for Question 25**

ADVICE

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

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 0.3 as a fraction.

(Total for Question 1 is 1 mark)

2. Work out 3^2

(Total for Question 2 is 1 mark)

3. Work out

$$20 \div (3 + 2)$$

(Total for Question 3 is 1 mark)

4. Write down a factor of **60** that is between **8** and **14**

(Total for Question 4 is 1 mark)

5. Simplify

$$3 \times w \times 5 \times t$$

(Total for Question 5 is 1 mark)

6. Look at the table for Question 6 in the Diagram Booklet.

Fay is planning a trip to a theme park for 1 adult and 2 children.

The costs for the trip are shown in the Diagram Booklet.

Fay has £200 to spend.

She pays all the costs.

How much money does she have left?

(4 marks)

Answer space continues on the next page.

6. continued.

£ _____

(Total for Question 6 is 4 marks)

Turn over

7. Below is a list of 8 letters.

Q R P P P P Q P

(a) Write down the mode.
(1 mark)

One of the 8 letters is going to be picked at random.
Look at the diagram for Question 7(b)(i) in the
Diagram Booklet.
It shows a probability scale.

(b) (i) On the probability scale in the
Diagram Booklet, mark the probability that
this letter will be **Q**
(1 mark)

(continued on the next page)

Turn over

7. (b) continued.

Remember:

Below is a list of 8 letters.

Q R P P P P Q P

(ii) Find the probability that this letter will be R
(1 mark)

(Total for Question 7 is 3 marks)

8. (a) Solve

$$m - 3 = 4$$

(1 mark)

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

(continued on the next page)

8. continued.

(b) Solve

$$3n + n = 24$$

(2 marks)

$n =$ _____

(Total for Question 8 is 3 marks)

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

(a) Find the value of y in the Diagram Booklet.
(1 mark)

$y =$ _____

(continued on the next page)

9. continued.

(b) Give a reason for your answer.

(1 mark)

(Total for Question 9 is 2 marks)

10. A shop sells jars of coffee.

Each jar of coffee costs £4

Michael has £23

(a) Work out the greatest number of jars of coffee

Michael can buy.

(2 marks)

(continued on the next page)

Turn over

10. continued.

Remember:

Each jar of coffee costs £4

In a sale on Wednesday, jars of coffee are sold at half price.

Michael thinks that he can now buy exactly twice the number of jars of coffee for £23

(b) Is Michael correct?

You must give a reason for your answer.

(1 mark)

Answer space and lines continue on the next page.

Turn over

10. (b) continued.

(Total for Question 10 is 3 marks)

11. Look at the diagram for Question 11(a) in the Diagram Booklet.

It shows two triangles on a grid.

They are labelled Triangle A and Triangle B

Triangle B is an enlargement of triangle A

(a) (i) Write down the scale factor of the enlargement.

(1 mark)

(ii) On the grid in the Diagram Booklet, mark the centre of enlargement.

(1 mark)

(continued on the next page)

11. continued.

Look at the diagram for Question 11(b) in the Diagram Booklet.

**It shows two parallelograms on a coordinate grid.
They are labelled Parallelogram C and
Parallelogram D**

Parallelogram D is a reflection of parallelogram C

**(b) (i) On the grid in the Diagram Booklet, draw
the mirror line.**

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

(1 mark)

(ii) Write down an equation of this mirror line.

(1 mark)

(Total for Question 11 is 4 marks)

Turn over

12. Elena spent 120 minutes at a sports centre.

She played badminton for 50 minutes.

She used the swimming pool for $\frac{1}{6}$ of the 120 minutes.

She used the gym for 20% of the 120 minutes.

She then spent the rest of the 120 minutes in the cafe.

(a) Work out the total time, in minutes, that Elena spent in the cafe.

(4 marks)

Answer space continues on the next page.

12. (a) continued.

_____ minutes

(continued on the next page)

Turn over

12. continued.

Elena got to the sports centre at 1.30 pm

**She had asked her friend to meet her in the cafe at
3 pm**

(b) Did Elena get to the cafe by 3 pm?

Give a reason for your answer.

(1 mark)

(Total for Question 12 is 5 marks)

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

The composite bar chart in the Diagram Booklet shows information about the number of people living in a village.

- (a) Write down the number of men living in the village in the year 2000**
(1 mark)

(continued on the next page)

13. continued.

- (b) Find the number of children living in the village
in the year 2010
(1 mark)**

(continued on the next page)

13. continued.

For the people living in the village in the year 2020

**(c) find the ratio of the number of children to the
TOTAL number of men and women.**

(2 marks)

(Total for Question 13 is 4 marks)

Turn over

14. Jenny drives from London to Swindon at an average speed of 54 miles per hour. She drives for $1\frac{1}{2}$ hours.

(a) Work out the distance from London to Swindon.
(2 marks)

_____ miles

(continued on the next page)

14. continued.

Aleksy is using a map.

The map has a scale of 1 : 25 000

On the map a road has a length of 6 cm

(b) Work out the length, in kilometres, of the real road.

(3 marks)

Answer space continues on the next page.

14. (b) continued.

_____ kilometres

(Total for Question 14 is 5 marks)

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

Find the coordinates of the midpoint of PQ in the Diagram Booklet.

(_____ , _____)

(Total for Question 15 is 2 marks)

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

It shows a quadrilateral **ABCD**

$$AB = (y + 1) \text{ cm}$$

$$BC = (y - 1) \text{ cm}$$

$$CD = 2y \text{ cm}$$

$$DA = (2y - 5) \text{ cm}$$

The perimeter of **ABCD** is **52** centimetres.

Work out the length of **DC**

(4 marks)

Answer space continues on the next page.

16. continued.

_____ centimetres

(Total for Question 16 is 4 marks)

Turn over

17. Look at the table for Question 17 in the Diagram Booklet.

There are only blue counters, green counters, red counters and yellow counters in a bag.

The table in the Diagram Booklet shows the number of blue counters in the bag.

There is a total of 100 counters in the bag.

Ashin takes at random a counter from the bag.

(a) Find the probability that the counter is NOT blue.

(2 marks)

(continued on the next page)

Turn over

17. continued.

The ratio of the number of blue counters to the number of green counters is $2:3$

(b) Work out the number of green counters in the bag.

(2 marks)

(continued on the next page)

17. continued.

Bradley says,

“The number of red counters in the bag is the same as the number of yellow counters in the bag.”

(c) Can Bradley be correct?

Give a reason for your answer.

(1 mark)

(Total for Question 17 is 5 marks)

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

It shows a ratio.

There are 240 cans of drink on a shelf.

Each can contains cola or lemonade or orange.

$\frac{1}{2}$ of the cans of lemonade and $\frac{1}{12}$ of the cans of orange are removed from the shelf.

Work out the number of cans of cola as a percentage of the total number of cans of drink remaining on the shelf.

(5 marks)

Answer space continues on the next two pages.

18. continued.

Turn over

40

18. continued.

_____ %

(Total for Question 18 is 5 marks)

Turn over

19. Write **500** as a product of powers of its prime factors.

(3 marks)

Answer space continues on the next page.

19. continued.

(Total for Question 19 is 3 marks)

Turn over

20. (a) Work out

$$1\frac{3}{5} + 2\frac{1}{4}$$

Give your answer as a mixed number.

(2 marks)

(continued on the next page)

Turn over

20. continued.

(b) Show that

$$2\frac{2}{3} \div 6 = \frac{4}{9}$$

(2 marks)

(Total for Question 20 is 4 marks)

Turn over

21. Simplify

$$(2^{-5} \times 2^8)^2$$

Give your answer as a power of 2

(Total for Question 21 is 2 marks)

22. Work out

$$0.004 \times 0.32$$

(Total for Question 22 is 2 marks)

Turn over

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

A car factory is going to make four different car models A, B, C and D

80 people are asked which of the four models they would be most likely to buy.

The table in the Diagram Booklet shows information about the results.

The factory is going to make 40 000 cars next year.

Work out how many model B cars the factory should make next year.

(2 marks)

Answer space continues on the next page.

23. continued.

(Total for Question 23 is 2 marks)

Turn over

24. Rizwan writes down three numbers **p**, **q** and **r**

$$\mathbf{p : q = 1 : 3}$$

$$\mathbf{q : r = 6 : 5}$$

(a) (i) Find **p : q : r**
(2 marks)

(continued on the next page)

24. (a) continued.

- (ii) Express p as a fraction of the total of the three numbers p , q and r
(2 marks)

(continued on the next page)

24. continued.

Emma writes down three numbers w , x and y

$$\mathbf{x = 2w}$$

$$\mathbf{y = 5x}$$

(b) Find $w : y$

(2 marks)

Answer space continues on the next page.

24. (b) continued.

(Total for Question 24 is 6 marks)

25. Look at Diagram 1 and Diagram 2 for Question 25 in the Diagram Booklet.

You may be provided with a model.

It is NOT accurate.

$$\text{pressure} = \frac{\text{force}}{\text{area}}$$

Diagram 1 and the model show a storage tank that exerts a force of 10 000 newtons on the ground.

The base of the tank in contact with the ground is a 4 metres by 2 metres rectangle.

Diagram 2 shows the base view.

Work out the pressure on the ground due to the tank.

(2 marks)

Answer space continues on the next page.

25. continued.

_____ newtons / m²

(Total for Question 25 is 2 marks)

Turn over

26. (a) Solve

$$\frac{5x}{2} + 3 > 18$$

(3 marks)

(continued on the next page)

Turn over

26. continued.

(b) Factorise

$$x^2 + 10x + 9$$

(2 marks)

(Total for Question 26 is 5 marks)

TOTAL FOR PAPER IS 80 MARKS

END OF PAPER
