

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

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 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

Turn over

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.

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

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)

Turn over

3. Work out

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

(Total for Question 3 is 1 mark)

Turn over

10

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

(Total for Question 4 is 1 mark)

Turn over

5. Simplify

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

(Total for Question 5 is 1 mark)

Turn over

- 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 is on the next two pages.

Turn over

6. continued.

Turn over

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)

(continued on the next page)

Turn over

7. continued.

Remember:

Below is a list of 8 letters.

Q R P P P P Q P

**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.

(continued on the next page)

Turn over

7. continued.

- (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)

Turn over

8. (a) Solve

$$m - 3 = 4$$

(1 mark)

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

(continued on the next page)

Turn over

8. continued.

(b) Solve

$$3n + n = 24$$

(2 marks)

n = _____

(Total for Question 8 is 3 marks)

Turn over

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)

Turn over

9. continued.

(b) Give a reason for your answer.

(1 mark)

(Total for Question 9 is 2 marks)

Turn over

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)

Answer space continues on the next page.

10. (a) continued.

(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**

(continued on the next page)

Turn over

10. continued.

(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)

Turn over

**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****

(continued on the next page)

11. continued.

**(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)

Turn over

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**

(continued on the next page)

Turn over

11. continued.

- (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.

(continued on the next page)

Turn over

12. continued.

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

(4 marks)

Answer space continues on the next page.

Turn over

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)

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

Turn over

12. (b) continued.

(Total for Question 12 is 5 marks)

Turn over

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)

Turn over

13. continued.

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

(continued on the next page)

Turn over

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)

Answer space continues on the next page.

14. (a) continued.

_____ miles

(continued on the next page)

Turn over

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.**

Turn over

14. (b) continued.

_____ kilometres

(Total for Question 14 is 5 marks)

Turn over

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)

Turn over

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 is on the next two
pages.

Turn over

16. continued.

Turn over

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.

(continued on the next page)

Turn over

17. continued.

(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)

Turn over

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)

Answer lines continue on the next page.

Turn over

17. (c) continued.

(Total for Question 17 is 5 marks)

Turn over

**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.**

(continued on the next page)

18. continued.

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.

Turn over

18. continued.

Turn over

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)

Answer space continues on the next page.

Turn over

20. (a) continued.

(continued on the next page)

Turn over

20. continued.

(b) Show that

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

(2 marks)

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

Turn over

20. (b) continued.

(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

(2 marks)

Answer space continues on the next page.

Turn over

21. continued.

(Total for Question 21 is 2 marks)

Turn over

22. Work out

$$0.004 \times 0.32$$

(2 marks)

Answer space continues on the next page.

Turn over

22. continued.

(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.

(continued on the next page)

Turn over

23. continued.

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

(2 marks)

Answer space continues on the next page.

Turn over

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)

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

Turn over

24. (a) (i) continued.

(continued on the next page)

Turn over

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)

Turn over

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.**

Turn over

24. (b) continued.

(Total for Question 24 is 6 marks)

Turn over

- 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.

(continued on the next page)

Turn over

25. continued.

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

(2 marks)

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

Turn over

25. continued.

_____ newtons / m²

(Total for Question 25 is 2 marks)

Turn over

26. (a) Solve

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

(3 marks)

Answer space continues on the
next page.

Turn over

26. (a) continued.

(continued on the next page)

Turn over

26. continued.

(b) Factorise

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

(2 marks)

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

Turn over

26. (b) continued.

(Total for Question 26 is 5 marks)

TOTAL FOR PAPER IS 80 MARKS

END OF PAPER
