

Paper Reference 1MA1/3F
Pearson Edexcel
Level 1/Level 2 GCSE (9 – 1)

Total Marks

Mathematics
Paper 3
(Calculator)
Foundation Tier

Tuesday 11 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					

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.

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.

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 **478** to the nearest hundred.

(Total for Question 1 is 1 mark)

2. Write down a multiple of 8 that is between 41 and 60

(Total for Question 2 is 1 mark)

3. Change 1·5 kilometres to metres.

_____ metres

(Total for Question 3 is 1 mark)

4. Here is a list of eight numbers.

4 6 9 10 15 27 30 40

From the list, write down all the numbers that are
powers of 3

(Total for Question 4 is 1 mark)

5. Write 19% as a fraction.

(Total for Question 5 is 1 mark)

10

6. Work out **20%** of **80**

(Total for Question 6 is 2 marks)

Turn over

7. Look at the table for Question 7 in the Diagram Book.

There are four types of counter in a bag.

The table shows the number of each type of counter in the bag.

There are more green counters than red counters.

How many more?

(Total for Question 7 is 2 marks)

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

It shows the gauge for the fuel tank of a car.

The fuel tank holds **52** litres of fuel when the tank is full.

The tank is $\frac{1}{4}$ full of fuel.

Work out how many more litres of fuel are needed to fill the tank.

(3 marks)

Answer space continues on the next page.

8. continued.

_____ litres

(Total for Question 8 is 3 marks)

9. Simplify

$$4e + 6f + 7e - f$$

(Total for Question 9 is 2 marks)

10. Bill has **400** counters in a bag.

He gives

35 of the counters to Sameena

50 of the counters to Henry

75 of the counters to Lucas

What fraction of the **400** counters is left in
Bill's bag?

Give your fraction in its simplest form.

(3 marks)

Answer space continues on the next page.

10. continued.

(Total for Question 10 is 3 marks)

11. Look at the table for Question 11 in the Diagram Book.

It shows the costs of sending a parcel by the Express service and by the Rapid service.

Brendan has to send 12 parcels.

It will be cheaper to send the parcels by the Express service than by the Rapid service.

(a) How much cheaper?

(3 marks)

Answer space continues on the next page.

11. (a) continued.

£ _____

(continued on the next page)

11. continued.

Luke wants to send 21 parcels by the Express service.

He does the calculation

$20 \times \text{£}15 = \text{£}300$ to estimate the cost.

- (b) Explain why Luke's calculation shows the actual cost will be more than £300**
(1 mark)

(Total for Question 11 is 4 marks)

Turn over

12. Ali, Ben and Cathy share an amount of money in the ratio

6 : 9 : 10

What fraction of the money does Ben get?

(Total for Question 12 is 2 marks)

13. The first term of a sequence of numbers is 24
The term-to-term rule of this sequence is 'add 8'

Josie says,

“No number in this sequence is in the 5 times table.”

- (a) Give an example to show that Josie is wrong.
(1 mark)

(continued on the next page)

13. continued.

Remember:

The first term of a sequence of numbers is 24

The term-to-term rule of this sequence is 'add 8'

(b) Is 85 a number in this sequence?

Give a reason for your answer.

(1 mark)

(Total for Question 13 is 2 marks)

14. Find the value of

$$\frac{5 \cdot 27 + 3 \cdot 5}{7 \cdot 9 - 4 \cdot 36}$$

Give your answer as a decimal.

Write down all the figures on your calculator display.

(Total for Question 14 is 2 marks)

15. You can use this rule to work out the total hire charge, in pounds (£), for hiring a 3D printer for a number of weeks.

$$\text{Total hire charge (£)} = \text{number of weeks} \times 70 + 50$$

Mia wants to hire a 3D printer for 4 weeks.

- (a) Work out the total hire charge.
(2 marks)

£ _____

(continued on the next page)

Turn over

15. continued.

Remember:

$$\text{Total hire charge (£)} = \text{number of weeks} \times 70 + 50$$

Zahir hires a 3D printer.

The total hire charge is £680

- (b) For how many weeks does Zahir hire the
3D printer?
(2 marks)

_____ weeks

(Total for Question 15 is 4 marks)

Turn over

- 16. Look at the diagrams for Question 16 in the Diagram Book.**

Diagram 1 shows a rectangle with length 6 cm and width 4 cm

Below Diagram 1, Diagram 2 shows a 6-sided shape made from two of these rectangles.

**Work out the perimeter of this 6-sided shape
(3 marks)**

Answer space continues on the next page.

16. continued.

_____ cm

(Total for Question 16 is 3 marks)

Turn over

17. Look at the diagram for Question 17 in the Diagram Book.

The accurate scale diagram shows a telephone mast and a box.

The box has a real width of 1.5 metres.

Find an estimate for the real height, in metres, of the telephone mast.

(2 marks)

Answer space continues on the next page.

17. continued.

_____ metres

(Total for Question 17 is 2 marks)

Turn over

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

It shows information about the numbers of points scored by 30 students in a quiz.

- (a) Find the modal number of points.
(1 mark)**

(continued on the next page)

18. continued.

- (b) Work out the total number of points scored.
(2 marks)**

(Total for Question 18 is 3 marks)

Turn over

19. Make **X** the subject of the formula

$$y = 2x + 4$$

(Total for Question 19 is 2 marks)

Turn over

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

It shows a square **ABDE** and an equilateral triangle **BCD**

Work out the size of angle **EBC**

_____ °

(Total for Question 20 is 2 marks)

Turn over

21. Liz goes on holiday to South Africa.

**Liz wants to change £850 into South African rand.
She wants to get as many 200 rand notes as possible.**

The exchange rate is £1 = 18.53 rand.

**Work out the greatest number of 200 rand notes
that Liz can get for £850**

(3 marks)

Answer space continues on the next page.

21. continued.

(Total for Question 21 is 3 marks)

Turn over

22. In October Sally drove **560** miles in her car.
The car travelled **34·5** miles for each gallon of petrol used.

Petrol cost **£1·08** per litre.

1 gallon = **4·55** litres.

Work out the cost of the petrol the car used in October.

(4 marks)

Answer space continues on the next page.

22. continued.

£ _____

(Total for Question 22 is 4 marks)

Turn over

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

Costcorp sells packets of mints to shop owners.

Work out the total number of medium packets of mints these shop owners buy.

You must show all your working.

(5 marks)

Answer space continues on the next page.

23. continued.

(Total for Question 23 is 5 marks)

Turn over

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

It shows an incomplete Venn diagram.

$$\mathcal{E} = \{1, 2, 3, 4, 5, 6, 7, 8, 9\}$$

$$A = \{1, 5, 6, 8, 9\}$$

$$B = \{2, 6, 9\}$$

(a) Complete the Venn diagram to represent this information.

(3 marks)

(continued on the next page)

24. continued.

A number is chosen at random from the universal set \mathcal{U}

- (b) Find the probability that the number is in the set $A \cap B$
(2 marks)

(Total for Question 24 is 5 marks)

25. Katy invests £200 000 in a savings account for 4 years.

The account pays compound interest at a rate of 1·5% per annum.

Calculate the total amount of interest Katy will get at the end of 4 years.

(3 marks)

Answer space continues on the next page.

25. continued.

£ _____

(Total for Question 25 is 3 marks)

Turn over

26. The table below shows information about the heights of 80 plants.

Height (h cm)	Frequency
$10 < h \leq 20$	8
$20 < h \leq 30$	12
$30 < h \leq 40$	14
$40 < h \leq 50$	12
$50 < h \leq 60$	16
$60 < h \leq 70$	18

- (a) Find the class interval that contains the median.
(1 mark)

(continued on the next page)

Turn over

26. continued.

(b) Look at the diagram for Question 26(b) in the Diagram Book.

On the grid, draw a frequency polygon for the information in the table.

(2 marks)

(Total for Question 26 is 3 marks)

27. Look at the diagram for Question 27 in the Diagram Book.

Sean has drawn a time series graph to show the numbers, in thousands, of visitors to a fun park.

Write down two things that are wrong or could be misleading with this graph.

1 _____

2 _____

(Total for Question 27 is 2 marks)

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

It shows a hexagon **ABCDEF**

The hexagon has one line of symmetry.

$$FA = BC$$

$$EF = CD$$

$$\text{Angle } ABC = 117^\circ$$

$$\text{Angle } BCD = 2 \times \text{angle } CDE$$

Work out the size of angle **AFE**

You must show all your working.

(4 marks)

Answer space continues on the next page.

28. continued.

_____o

(Total for Question 28 is 4 marks)

Turn over

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

Diagram 1 shows a tank.

Jeremy has to cover 3 tanks completely with paint.

Each tank is in the shape of a cylinder with both a top and a bottom as shown in Diagram 2

The tank has a diameter of 1.6 metres and a height of 1.8 metres.

Jeremy has 7 tins of paint.

Each tin of paint covers 5 m^2

Has Jeremy got enough paint to cover completely the 3 tanks?

You must show how you get your answer.

(5 marks)

Answer space continues on the next two pages.

29. continued.

Turn over

29. continued.

(Total for Question 29 is 5 marks)

Turn over

30. Solve the simultaneous equations

$$3x - 4y = 11$$

$$9x + 2y = 5$$

(3 marks)

Answer space continues on the next page.

30. continued.

$x =$ _____

$y =$ _____

(Total for Question 30 is 3 marks)

TOTAL FOR PAPER IS 80 MARKS

END OF PAPER
