

**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.**

<b>Surname</b>					
<b>Other names</b>					
<b>Centre Number</b>					
<b>Candidate Number</b>					

**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  $\pi$  button, take the value of  $\pi$  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.**

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**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.

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(Total for Question 1 is 1 mark)

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

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(Total for Question 2 is 1 mark)

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3. Change 1·5 kilometres to metres.

\_\_\_\_\_ metres

(Total for Question 3 is 1 mark)

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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

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(Total for Question 4 is 1 mark)

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5. Write 19% as a fraction.

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(Total for Question 5 is 1 mark)

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

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(Total for Question 6 is 2 marks)

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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?

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(Total for Question 7 is 2 marks)

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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)

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9. Simplify

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

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(Total for Question 9 is 2 marks)

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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.

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(Total for Question 10 is 3 marks)

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**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)**

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**(Total for Question 11 is 4 marks)**

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

**6 : 9 : 10**

**What fraction of the money does Ben get?**

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**(Total for Question 12 is 2 marks)**

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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)

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(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)**

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**(Total for Question 13 is 2 marks)**

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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.

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(Total for Question 14 is 2 marks)

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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)

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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)

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**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)

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**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)**

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**(continued on the next page)**

18. continued.

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

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(Total for Question 18 is 3 marks)

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

$$y = 2x + 4$$

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(Total for Question 19 is 2 marks)

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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)

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**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.

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(Total for Question 21 is 3 marks)

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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)

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**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.**

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**(Total for Question 23 is 5 marks)**

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**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)

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(Total for Question 24 is 5 marks)

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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)**

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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)

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(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)**

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**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)

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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  $5 \text{ m}^2$**

**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.

**29. continued.**

**(Total for Question 29 is 5 marks)**

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**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)

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**TOTAL FOR PAPER IS 80 MARKS**

**END OF PAPER**

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