

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

<b>Total Marks</b>
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**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**

**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 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.**

**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.**

**5**

**Answer ALL questions.**

**Write your answers in the spaces provided.**

**You must write down all the stages in your working.**

**Turn over**

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?**

**(2 marks)**

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

**7. continued.**

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**(Total for Question 7 is 2 marks)**

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**Turn over**

**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 is on the next page.**

**8. continued.**

\_\_\_\_\_ litres

**(Total for Question 8 is 3 marks)**

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**Turn over**

**9. Simplify**

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

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**(Total for Question 9 is 2 marks)**

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**Turn over**



**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.**

**Turn over**

**10. continued.**

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**(Total for Question 10 is 3 marks)**

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**Turn over**

**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 is on the next page.**

**Turn over**

**11. (a) continued.**

**£** \_\_\_\_\_

**(continued on the next page)**

**Turn over**

**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.**

**(continued on the next page)**

**11. continued.**

**(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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**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?**

**(2 marks)**

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

**12. continued.**

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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'**

**(continued on the next page)**

**13. continued.**

**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)**

**Turn over**

**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)**

**Write your answer in the space below and on the lines on the next page.**

**Turn over**

**13. (b) continued.**

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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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Turn over

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)

Answer space is on the next page.

Turn over

15. (a) continued.

£ \_\_\_\_\_

(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)**

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

**Turn over**



**15. (b) continued.**

\_\_\_\_\_ 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 two pages.**

**16. continued.**

**Turn over**

**16. continued.**

\_\_\_\_\_ **cm**

**(Total for Question 16 is 3 marks)**

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**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)**

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**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)**

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**(continued on the next page)**

**18. continued.**

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

**(2 marks)**

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



**18. (b) continued.**

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**(Total for Question 18 is 3 marks)**

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**19. Make  $x$  the subject of the formula**

$$y = 2x + 4$$

**(2 marks)**

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

**19. continued.**

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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  
(2 marks)**

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

**20. continued.**

○

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**(Total for Question 20 is 2 marks)**

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**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 is on the next page.**

**21. continued.**

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**(Total for Question 21 is 3 marks)**

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**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  $\text{£}1.08$  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 two pages.**



**22. continued.**

**Turn over**

**22. continued.**

£ \_\_\_\_\_

**(Total for Question 22 is 4 marks)**

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**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  
two pages.**

**23. continued.**

**Turn over**

**23. continued.**

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**(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  $\mathcal{E}$**

- (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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**Turn over**

**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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**Turn over**

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

<b>Height (h cm)</b>	<b>Frequency</b>
<b><math>10 &lt; h \leq 20</math></b>	<b>8</b>
<b><math>20 &lt; h \leq 30</math></b>	<b>12</b>
<b><math>30 &lt; h \leq 40</math></b>	<b>14</b>
<b><math>40 &lt; h \leq 50</math></b>	<b>12</b>
<b><math>50 &lt; h \leq 60</math></b>	<b>16</b>
<b><math>60 &lt; h \leq 70</math></b>	<b>18</b>

**(continued on the next page)**

**Turn over**

**26. continued.**

**(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.  
(2 marks)**

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

1 \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Turn over**

**27. continued.**

**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 is on the next two pages.**

**Turn over**

**28. continued.**

**Turn over**



**28. continued.**

o

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

**(continued on the next page)**

**Turn over**

**29. continued.**

**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)**

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**Turn over**

**30. Solve the simultaneous equations**

$$3x - 4y = 11$$

$$9x + 2y = 5$$

**(3 marks)**

**Answer space continues on the next  
two pages.**

**30. continued.**

**Turn over**

**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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