

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

<b>Total Marks</b>
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**Mathematics**  
**PAPER 1**  
**(Non-Calculator)**  
**Foundation Tier**

**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. 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.**

**You may be provided with models for Question 6(b), Question 25 and Question 26**

**They are NOT accurate.**

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

**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.**

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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  $\frac{3}{10}$  as a percentage.

\_\_\_\_\_ %

**(Total for Question 1 is 1 mark)**

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**2. Write the following six numbers in order of size.**

**Start with the smallest number.**

**8**

**−7**

**−10**

**1**

**0**

**−2**

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**(Total for Question 2 is 1 mark)**

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3. Write  $\frac{9}{100}$  as a decimal.

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**(Total for Question 3 is 1 mark)**

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**4. Write 327 correct to the nearest ten.**

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**(Total for Question 4 is 1 mark)**

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**5. Write down the value of  $7^2$**

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**(Total for Question 5 is 1 mark)**

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**6. Look at the diagram for Question 6(a) in the Diagram Booklet.**

**It shows a quadrilateral labelled ABCD**

**AB is parallel to DC**

**(a) Write down the mathematical name of the quadrilateral.**

**(1 mark)**

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**(continued on the next page)**

**Turn over**

**6. continued.**

**Look at the diagram for Question 6(b)  
in the Diagram Booklet.**

**You may be provided with a model.  
It shows a 3-D shape.**

**(b) Write down the mathematical  
name of the 3-D shape.  
(1 mark)**

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**(Total for Question 6 is 2 marks)**

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**Turn over**

7. £42 is shared equally between  
3 friends.

How much does each friend get?

£ \_\_\_\_\_

(Total for Question 7 is 2 marks)

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**8. Look at the diagram for Question 8 in the Diagram Booklet.**

**It shows a bar chart.**

**Grace recorded the eye colour of each of the students in her class.**

**The frequency table on the next page shows her results.**

**8. continued.**

<b>Eye colour</b>	<b>Frequency</b>
<b>blue</b>	<b>10</b>
<b>brown</b>	<b>15</b>
<b>green</b>	<b>4</b>

**Grace then drew the bar chart in the  
Diagram Booklet for this information.**

**(continued on the next page)**

**Turn over**



**8. continued.**

**Write down one thing that is wrong  
with the bar chart.**

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**(Total for Question 8 is 1 mark)**

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**Turn over**

**9. Danny buys,**

**1 loaf of bread for £1 · 20**

**1 bottle of milk for 70 pence**

**2 packets of cheese for £2 · 30 each  
packet**

**Danny pays with a £10 note.**

**He says, “I should get £3 · 30  
change.”**

**Is Danny correct?**

**You must show how you get your  
answer.**

**(3 marks)**

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

**Turn over**

**9. continued.**

**(Total for Question 9 is 3 marks)**

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**Turn over**

**10. Rachel records the temperature in her garden at noon each day.**

**On Monday, the temperature was  $5^{\circ}\text{C}$**

**On Tuesday, the temperature was  $10^{\circ}$  less than the temperature on Monday.**

**On Wednesday, the temperature was  $3^{\circ}$  greater than the temperature on Tuesday.**

**(continued on the next page)**

**10. continued.**

**Find the difference between the temperature on Monday and the temperature on Wednesday.**

**You must show all your working.**

**(2 marks)**

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

**10. continued.**

\_\_\_\_\_ °C

**(Total for Question 10 is 2 marks)**

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**Turn over**

**11. Look at the diagram for Question 11 in the Diagram Booklet.**

**It is an incomplete pictogram which shows information about the number of video games sold in a shop on Monday, on Tuesday and on Wednesday.**

**(a) How many video games were sold on Monday?**

**(1 mark)**

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**(continued on the next page)**

**Turn over**

**11. continued.**

**More video games were sold on  
Tuesday than on Wednesday.**

**(b) How many more?**

**(2 marks)**

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**(continued on the next page)**

**Turn over**



**11. continued.**

**On Thursday and Friday, a total of 32 video games were sold in the shop.**

**$\frac{1}{4}$  of these 32 video games were sold in the shop on Thursday.**

**(c) Complete the pictogram in the Diagram Booklet for Thursday and Friday.  
(3 marks)**

**(Total for Question 11 is 6 marks)**

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**Turn over**

**12. There are two drama groups in a school.**

**In one group there are 36 boys and 48 girls.**

**In the other group,  $\frac{3}{7}$  of the students are boys and the rest of the students are girls.**

**Ann says,**

**“The ratio of the number of boys to the number of girls is the same for both groups.”**

**(continued on the next page)**

**12. continued.**

**Is Ann correct?**

**You must show how you get your  
answer.**

**(3 marks)**

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

**Turn over**

**12. continued.**

**(Total for Question 12 is 3 marks)**

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**Turn over**

**13. A number sequence starts with the three numbers shown below.**

**1****2****4**

**Emma says that the next term is 7**

**(a) Explain why Emma may be correct.**

**(1 mark)**

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**(continued on the next page)**

**Turn over**

**13. continued.**

**Below are the first four terms of the sequence of triangle numbers.**

**1          3          6          10**

**(b) Find the 8th term of this sequence.**

**(2 marks)**

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

**Turn over**

**13. (b) continued.**

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**(Total for Question 13 is 3 marks)**

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**14. 3 kg of carrots cost £1 · 80**

**2 kg of carrots and 5 kg of potatoes  
cost a total of £3 · 45**

**Work out the total cost of 4 kg of  
carrots and 2 kg of potatoes.**

**You must show all your working.  
(4 marks)**

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



**14. continued.**

**Turn over**

**14. continued.**

**£ \_\_\_\_\_**

**(Total for Question 14 is 4 marks)**

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**Turn over**

- 15. (a) Expand**  
 **$2(p + q)$**   
**(1 mark)**
- 

**(continued on the next page)**

**Turn over**

**15. continued.**

**(b) Factorise**

$$6y^2 - 5y$$

**(1 mark)**

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**(continued on the next page)**

**Turn over**

**15. continued.**

**(c) Solve**

$$4x - 7 = 37$$

**(2 marks)**

**x = \_\_\_\_\_**

**(Total for Question 15 is 4 marks)**

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

**It shows a kite  $ABCD$**

$$AB = (4x - 2) \text{ cm}$$

**Jasper says that  $x$  could be  $0.5$**

**(a) Explain why Jasper cannot be correct.**

**(1 mark)**

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**(continued on the next page)**

**Turn over**

**16. continued.**

**(b) Find the value of  $X$ , when**

$$\mathbf{AD = 3AB}$$

**The kite has a perimeter of**

**64 cm**

**(3 marks)**

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

**16. (b) continued.**

**$x =$  \_\_\_\_\_**

**(Total for Question 16 is 4 marks)**

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**Turn over**



**17. Look at the information for  
Question 17 in the Diagram Booklet.  
It shows a recipe.**

**Heidi wants to make some  
biscuits using the recipe in the  
Diagram Booklet.**

**Heidi thinks that she has,**

**500 grams butter**

**700 grams flour**

**250 grams sugar**

**(continued on the next page)**

**17. continued.**

**Assuming that these weights are correct,**

**(a) work out the greatest number of biscuits Heidi can make.**

**You must show all your working.**

**(4 marks)**

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

**Turn over**

**17. (a) continued.**

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**(continued on the next page)**

**Turn over**

**17. continued.**

**Heidi is wrong.**

**She has more than 250 grams of sugar.**

**(b) Does this affect the greatest number of biscuits Heidi can make?**

**Give a reason for your answer.**

**(1 mark)**

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

**17. (b) continued.**

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**(Total for Question 17 is 5 marks)**

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**Turn over**

**18. Look at the diagram for Question 18 in the Diagram Booklet.**

**It shows a grid.**

**On the grid, draw the graph of  
 $y = 2x - 2$  for values of  $x$  from  
 $-2$  to  $3$**

**(3 marks)**

**Space for working continues on the next page.**

**18. continued.**

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

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**Turn over**

**19. Robin buys a watch for £80**

**He sells the watch for £56**

**Work out his percentage loss.**

**(3 marks)**

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



**19. continued.**

\_\_\_\_\_ %

**(Total for Question 19 is 3 marks)**

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**Turn over**

**20. (a) Work out**

$$3.67 \times 4.2$$

**(3 marks)**

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

**20. (a) continued.**

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**(continued on the next page)**

**20. continued.**

**(b) Work out**

$$59 \cdot 84 \div 1 \cdot 6$$

**(3 marks)**

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

**20. (b) continued.**

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**(Total for Question 20 is 6 marks)**

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**21. Look at the diagram for Question 21 in the Diagram Booklet.**

**It shows an incomplete Venn diagram.**

$$\mathcal{E} = \{\text{even numbers less than } 19\}$$

$$A = \{6, 12, 18\}$$

$$B = \{2, 6, 14, 18\}$$

**Complete the Venn diagram in the Diagram Booklet for this information.**

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

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**22. Work out**

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

**Give your answer as a mixed number.  
(3 marks)**

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

**22. continued.**

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**(Total for Question 22 is 3 marks)**

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**Turn over**



**23. At the end of 2017**

**the value of Tamara's house was  
£220 000**

**the value of Rahim's house was  
£160 000**

**At the end of 2019**

**the value of Tamara's house had  
decreased by 20%**

**the value of Rahim's house had  
increased by 30%**

**(continued on the next page)**

**23. continued.**

**At the end of 2019, whose house had the greater value?**

**You must show how you get your answer.**

**(4 marks)**

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

**23. continued.**

**(Total for Question 23 is 4 marks)**

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**Turn over**

**24. Look at the information for  
Question 24 in the Diagram Booklet.  
Rosie, Matilda and Ibrahim collect  
stickers.**

**Ibrahim has 24 more stickers than  
Matilda.**

**Ibrahim has more stickers than Rosie.**

**How many more?**

**(3 marks)**

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

**24. continued.**

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**(Total for Question 24 is 3 marks)**

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**Turn over**

**25. Look at Diagram 1 and Diagram 2 for Question 25 in the Diagram Booklet. You may be provided with a model. Diagram 1 and the model show a prism.**

**The cross section of the prism shown in Diagram 2 is a right-angled triangle labelled  $ABC$**

**Angle  $ABC$  is a right angle.**

**The base of the triangle,  $BC = 5\text{ cm}$**

**(continued on the next page)**

**25. continued.**

**The prism has length 25 cm**

**The prism has volume  $750 \text{ cm}^3$**

**Work out the height of the prism.**

**(3 marks)**

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

**25. continued.**

**Turn over**



**25. continued.**

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

**(Total for Question 25 is 3 marks)**

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**Turn over**

**26. Look at Diagram 1, Diagram 2 and the formula for Question 26 in the Diagram Booklet.**

**You may be provided with two models.**

**Diagram 1 and Model A show a cube with edges of length  $x$  cm**

**Diagram 2 and Model B show a sphere of radius 3 cm**

**The surface area of the cube is equal to the surface area of the sphere.**

**(continued on the next page)**

**26. continued.**

**Show that  $x = \sqrt{k\pi}$  where  $k$  is an integer.**

**(4 marks)**

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

**26. continued.**

**(Total for Question 26 is 4 marks)**

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**Turn over**

- 27. Freddie measured the length of a pencil as  $7.2\text{ cm}$  correct to 1 decimal place.**

**Complete the error interval for the length,  $p\text{ cm}$ , of the pencil.**

**\_\_\_\_\_  $\leq p <$  \_\_\_\_\_**

**(Total for Question 27 is 2 marks)**

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**28. The equation of a straight line  $L$  is**  
 **$y = 3 - 4x$**

**(i) Write down the gradient of  $L$**   
**(1 mark)**

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**(continued on the next page)**

**Turn over**

**28. continued.**

**(ii) Write down the coordinates of the point where  $L$  crosses the  $y$ -axis.**

**(1 mark)**

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

**28. (ii) continued.**

( \_\_\_\_\_ , \_\_\_\_\_ )

**(Total for Question 28 is 2 marks)**

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**TOTAL FOR PAPER IS 80 MARKS**

**END OF PAPER**

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