

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

Total Marks
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Mathematics  
PAPER 2 (Calculator)  
Foundation Tier

Friday 10 November 2023 – Morning

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, calculator, Formulae Sheet (enclosed). 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 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.**

**You may be provided with models for Question 7(a), Question 7(b) and Question 28. They are NOT accurate.**

**You may be provided with a cutout shape for Question 21.**

**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 down two factors of 18**

\_\_\_\_\_ , \_\_\_\_\_

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

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**2. Write  $0.9$  as a fraction.**

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

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**3. Change 7 metres to centimetres.**

\_\_\_\_\_ centimetres

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

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**10**

- 4. Write down a square number that is between 10 and 50**

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

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**Turn over**

**5. Work out**  
**50% of 240**

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

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6. Lydia works for 4 hours.  
She is paid £50

How much is Lydia paid per hour?

£ \_\_\_\_\_

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

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**7. Look at the diagram for Question 7(a) in the Diagram Booklet.**

**You may be provided with a model.**

**They show a 3–D shape.**

**(a) Write down the name of this 3–D shape.**

**(1 mark)**

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**(continued on the next page)**

- 7. (b) Look at the diagram for Question 7(b) in the Diagram Booklet.**

**You may be provided with a model.**

**They show a triangular prism.**

**Write down the number of vertices of the prism.**

**(1 mark)**

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

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

**Curtis needs to buy some items for his sports club.**

**The table in the Diagram Booklet shows the prices.**

**Curtis needs to buy**

**5 footballs**

**6 hockey sticks**

**2 cricket bats**

**4 tennis balls.**

**(continued on the next page)**

**Turn over**

**8. continued.**

**Curtis has £200 to spend.**

**Show that Curtis can buy all the items  
he needs.**

**(4 marks)**

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

**Turn over**



8. continued.

Turn over

**8. continued.**

**(Total for Question 8 is 4 marks)**

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**Turn over**

**9. Look at the table for Question 9 in the Diagram Booklet.**

**Harris is buying a shirt and a tie.**

**He has a choice of three colours of shirt and a choice of three styles of tie as shown in the table in the Diagram Booklet.**

**Harris is going to choose one shirt and one tie.**

**List all the possible combinations Harris can choose.**

**(2 marks)**

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

**9. continued.**

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

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- 10. There are 24 red counters and 40 blue counters in a bag.**

**Write down the ratio of the number of red counters to the number of blue counters in the bag.**

**Give your ratio in its simplest form.**

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

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**Turn over**

**11. Rima is going to roll a fair  
6-sided dice.**

**(a) Choose the word that best  
describes the probability that the  
dice will land on the number 3**

**impossible                  unlikely**

**evens                  likely                  certain**

**(1 mark)**

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**(continued on the next page)**

**11. continued.**

**(b) Choose the word that best describes the probability that the dice will land on an odd number.**

**impossible                  unlikely**

**evens                  likely                  certain**

**(1 mark)**

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**(Total for Question 11 is 2 marks)**

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**Turn over**

- 12. A car travels at an average speed of 37 miles per hour for 3 hours.**

**Work out the distance that the car travels in the 3 hours.**

\_\_\_\_\_ miles

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

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**Turn over**



**13. Look at the diagram for  
Question 13(a) in the  
Diagram Booklet.**

**It shows a rectangle 5 cm long and  
4 cm wide.**

**Milo is trying to find the area of the  
rectangle.**

**(continued on the next page)**

**13. continued.**

**He writes,**

**“The area is  $400 \text{ cm}^2$  because  
 $5 \times 4 \times 5 \times 4 = 400$ ”**

**(a) Explain what is wrong with Milo’s  
method.**

**(1 mark)**

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**(continued on the next page)**

**Turn over**

**13. continued.**

**Anya works out the area of a shape.**

**Her answer is 86 cm**

**(b) Explain why her answer cannot  
be fully correct.**

**(1 mark)**

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

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**Turn over**

- 14. 3 kg of flour costs £4·05**  
**5 kg of flour and 6 kg of sugar cost**  
**£11·85**

**Work out the cost of 2 kg of flour**  
**and 5 kg of sugar.**

**(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. Martha and Nabeel share £120**

**Martha gets 72% of the money.**

**She spends 30% of the money she gets.**

**How much money does Martha have left?**

**(3 marks)**

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

**15. continued.**

£ \_\_\_\_\_

**(Total for Question 15 is 3 marks)**

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**Turn over**



- 16. Look at the information for Question 16 in the Diagram Booklet.**
- 160 people were asked to choose their favourite type of book.**
- They each chose from romance or adventure or horror or thriller.**

**Work out the total number of people who chose horror.**

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

**(4 marks)**

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

**16. continued.**

**Turn over**

**16. continued.**

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

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**Turn over**

**17. Look at the diagram for Question 17 in the Diagram Booklet.**

**It shows an incomplete stem and leaf diagram.**

**Here are the heights, in cm, of 16 sunflowers.**

**168    173    172    180**

**162    191    183    160**

**178    184    197    177**

**172    186    188    180**

**Show this information in the stem and leaf diagram in the Diagram Booklet.**

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

**Turn over**

**17. continued.**

**(Total for Question 17 is 3 marks)**

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**Turn over**

18. (a) Work out

$$\frac{9 \cdot 8 + 6 \cdot 8}{4 \cdot 2 \times 2 \cdot 1}$$

Give your answer as a decimal.

Write down all the figures on  
your calculator display.

(2 marks)

Answer space continues on the  
next page.

**18. (a) continued.**

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**(b) Write your answer to part (a)  
correct to 2 decimal places.  
(1 mark)**

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

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**Turn over**

**19. Look at the diagram for Question 19 in the Diagram Booklet.**

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

**CB is parallel to DE**

**Angle AED =  $132^\circ$**

**Angle ABD is a right angle.**

**Angle EAB is marked  $x$**

**(continued on the next page)**



**19. continued.**

**Work out the size of the angle  
marked X**

**You must give a reason for each  
stage of your working.**

**(4 marks)**

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

**19. continued.**

**Turn over**

**19. continued.**

○

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**(Total for Question 19 is 4 marks)**

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**Turn over**

20. (a) Complete the table of values for  
 $y = x^2 - x - 2$

There are four spaces to fill.

(2 marks)

<b>x</b>	<b>y</b>
<b>−2</b>	<b>4</b>
<b>−1</b>	
<b>0</b>	
<b>1</b>	<b>−2</b>
<b>2</b>	
<b>3</b>	

(continued on the next page)

Turn over

**20. continued.**

**(b) Look at the diagram for  
Question 20(b) in the  
Diagram Booklet.**

**It is a grid.**

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

**(2 marks)**

**(Total for Question 20 is 4 marks)**

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

**It shows triangle **A** and triangle **B** on a grid.**

**Describe fully the single transformation that maps triangle **A** onto triangle **B****

**A cutout shape may be available if you wish to use it.**

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**(Total for Question 21 is 2 marks)**

**Turn over**

**22. (a) Expand and simplify**

$$3(2y - 5) + 7(y + 2)$$

**(2 marks)**

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**(continued on the next page)**

**Turn over**

**22. continued.**

**(b) Factorise fully**

$$6x^2 + 15x$$

**(2 marks)**

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**(continued on the next page)**

**Turn over**



**22. continued.**

**(c) Make  $q$  the subject of the formula**

$$p = 3q + 11$$

**(2 marks)**

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**(Total for Question 22 is 6 marks)**

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**Turn over**

**23. Karen is organising a party for a charity.**

**She spends**

**£100 on food**

**£120 on a hall**

**£80 on a DJ.**

**Karen sells 54 tickets for the party.**

**Each ticket costs £7.50**

**Work out the percentage profit Karen makes for the charity.**

**(4 marks)**

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

**Turn over**

**23. continued.**

**Turn over**

**23. continued.**

\_\_\_\_\_ %

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

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**Turn over**

**24. Andrew invests £4500 in a savings account for 2 years.**

**The account pays compound interest at a rate of  $3.4\%$  per year.**

**Calculate how much Andrew has in this savings account at the end of the 2 years.**

**(2 marks)**

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

**24. continued.**

£ \_\_\_\_\_

**(Total for Question 24 is 2 marks)**

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**Turn over**

**25. Solve**

$$5x - 14 = 52 - x$$

**(3 marks)**

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

**25. continued.**

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

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

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**Turn over**



**26. Chris, Debbie and Errol share some money in the ratio  $3 : 4 : 2$**

**Debbie gets £120**

**Chris then gives some of his share to Debbie and some of his share to Errol.**

**The money that Chris, Debbie and Errol each have is now in the ratio  $2 : 5 : 3$**

**How much money did Chris give to Errol?**

**(4 marks)**

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

**Turn over**

**26. continued.**

**Turn over**

**26. continued.**

£ \_\_\_\_\_

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

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**Turn over**

**27. The bearing of port B from port A is  
147°**

**Work out the bearing of port A from  
port B**

\_\_\_\_\_ °

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

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**28. Look at the diagram for Question 28 in the Diagram Booklet.**

**You may be provided with a model.**

**They show an empty tank in the shape of a cylinder.**

**The cylinder has radius 15 cm and height 43 cm**

**Water flows into the tank at a rate of 0.47 litres per minute.**

**(continued on the next page)**

**28. continued.**

**Calculate the number of minutes it will take to completely fill the tank.**

**Give your answer correct to the nearest minute.**

**(4 marks)**

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

**Turn over**

**28. continued.**

\_\_\_\_\_ **minutes**

**(Total for Question 28 is 4 marks)**

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**Turn over**

**29. Look at the diagram for Question 29 in the Diagram Booklet.**

**It shows a right-angled triangle ABC**

**$BC = 28 \text{ cm}$**

**Angle  $ACB = 49^\circ$**

**Angle ABC is a right angle.**

**Calculate the length of AB**

**Give your answer correct to**

**3 significant figures.**

**(2 marks)**

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



**29. continued.**

**Turn over**

**29. continued.**

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

**(Total for Question 29 is 2 marks)**

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**Turn over**

**30. Solve the simultaneous equations**

$$3x + y = -4 \cdot 5$$

$$4x + 3y = -3 \cdot 5$$

**(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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