

Paper Reference 4MA1/1F  
Pearson Edexcel  
International GCSE

Total Marks
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Mathematics A  
PAPER 1F  
Foundation Tier  
(Calculator)

Time: 2 hours 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 Booklet  
Formulae Pages**

**Turn over**

# **INSTRUCTIONS**

**Answer ALL questions.**

**Without sufficient working, correct answers may be awarded no marks.**

**Answer the questions in the spaces provided in this Question Paper or on the separate diagrams – there may be more space than you need.**

**CALCULATORS MAY BE USED.**

**You must NOT write anything on the Formulae Pages. Anything you write on the Formulae Pages will gain NO credit.**

**Turn over**

## **INFORMATION**

**The total mark for this paper is 100**

**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 a shape for Question 12(b)**

**You may be provided with a model for Question 22**

**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.**

**Check your answers if you have time at the end.**

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**Answer ALL TWENTY TWO questions.**

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

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

1. Look at the table for Question 1(a) in the Diagram Booklet.

It shows five fractions.

Two of the fractions in the table are equivalent to  $\frac{1}{5}$

- (a) Mark the box beside each of these two fractions.  
(2 marks)

(continued on the next page)

**1. continued.**

**Look at the diagram for Question 1(b) and Question 1(c) in the Diagram Booklet.**

**It shows an 8-sided polygon and its diagonals.**

**(b) Write down the mathematical name of an 8-sided polygon.**  
**(1 mark)**

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**(continued on the next page)**

**Turn over**



**1. continued.**

**(c) Shade  $\frac{3}{4}$  of the polygon  
shown in the diagram in the  
Diagram Booklet.**

**(1 mark)**

**(continued on the next page)**

**1. continued.**

**The area of a polygon is  $56 \text{ cm}^2$**

**(d) Find  $\frac{3}{4}$  of 56**

**(2 marks)**

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**(Total for Question 1 is 6 marks)**

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**Turn over**

**2. Look at the table for Question 2 in the Diagram Booklet.**

**It shows the average number of spectators per match, for each of five Spanish football teams, in one season.**

**(a) Which team had the lowest average number of spectators per match?**

**(1 mark)**

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**(continued on the next page)**

**Turn over**

**2. continued.**

**(b) Write the number 65 731 correct to the nearest thousand.**

**(1 mark)**

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**(c) Write down the value of the 6 in the number 38 699**

**(1 mark)**

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**(continued on the next page)**

**Turn over**

**2. continued.**

**In one match, Sevilla played Valencia.**

**In the match, Sevilla had 8 shots on target and Valencia had 12 shots on target.**

**(d) Write the ratio 8 : 12 in its simplest form.**

**(1 mark)**

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**(continued on the next page)**

**Turn over**

**2. continued.**

**In the same match, Valencia had  
72% possession of the ball.**

**(e) Write 72% as a fraction in its  
simplest form.**

**(2 marks)**

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

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**Turn over**

**3. Look at the diagram for Question 3 in the Diagram Booklet.**

**It shows a bar chart which gives information about the numbers of text messages that Susan and Philip sent from their mobile phones on each of six days one week.**

- (a) On which day did Susan send twice as many text messages as Philip?**
- (1 mark)**
- 

**(continued on the next page)**

**Turn over**

**3. continued.**

**(b) How many text messages did Philip send on Sunday?**

**(1 mark)**

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**On Saturday, Susan sent 15 text messages and Philip sent 40 text messages.**

**(c) Show this information on the bar chart in the Diagram Booklet.**

**(1 mark)**

**(continued on the next page)**

**Turn over**



**3. continued.**

**In the following week, Philip sent a total of 180 text messages.**

**Of these text messages, 25% were sent to Susan.**

**(d) Work out 25% of 180  
(2 marks)**

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**(Total for Question 3 is 5 marks)**

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**Turn over**

**4. Look at the table for Question 4 in the Diagram Booklet.**

**It shows the temperatures recorded at midnight and at midday for each of four North American cities on a Monday one week.**

**(a) Which city had the lowest midnight temperature?  
(1 mark)**

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**(continued on the next page)**

**Turn over**

**4. continued.**

**(b) Find the difference between  
the midnight temperature and  
midday temperature for Boston.  
(1 mark)**

\_\_\_\_\_ °C

**(continued on the next page)**

**Turn over**

**4. continued.**

**From Monday to Thursday, the midday temperature in Detroit increased by  $2^{\circ}\text{C}$  each day.**

**(c) Work out the midday temperature in Detroit on Thursday.  
(2 marks)**

\_\_\_\_\_  $^{\circ}\text{C}$

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

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**Turn over**

**5. James is on holiday in Canada.**

**The exchange rate is**

**£1 = 1.75 Canadian dollars.**

**(a) Change £800 into Canadian dollars.**

**(2 marks)**

**\_\_\_\_\_ Canadian dollars**

**(continued on the next page)**

**Turn over**

**5. continued.**

**Remember:**

**The exchange rate is**

**£1 = 1.75 Canadian dollars.**

**James buys a watch in Canada.**

**The price of the watch is 98 Canadian dollars.**

**In England the price of an identical watch is £60**

**(b) Work out the difference in the prices of the two watches.**

**Give your answer in pounds (£)  
(2 marks)**

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

**Turn over**

**5. (b) continued.**

**£** \_\_\_\_\_

**(Total for Question 5 is 4 marks)**

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**Turn over**

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

**It shows an accurate scale diagram of the map of an island drawn on a grid.**

**The position of Aaron's house is A**

**The position of Bharat's house is B**

**(a) Write down the coordinates of A  
(1 mark)**

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

**(continued on the next page)**

**Turn over**



**6. continued.**

**(b) By measurement, find the  
bearing of **A** from **B**  
(2 marks)**

○

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**(continued on the next page)**

**Turn over**

**6. continued.**

**(c) Measure the length of the  
line AB**

**Give your answer in centimetres  
correct to one decimal place.**

**(1 mark)**

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

**(continued on the next page)**

**Turn over**

**6. continued.**

**Aaron cycled along a straight path  
from his house to Bharat's house.**

**The scale of the map is 1 cm  
represents 5 km**

**(d) Work out the distance, in  
kilometres, that Aaron cycled.  
(1 mark)**

**\_\_\_\_\_ km**

**(continued on the next page)**

**Turn over**

**6. continued.**

**Aaron left his house at 10 45 am  
and arrived at Bharat's house at  
1 05 pm**

**(e) How long did Aaron's cycle ride  
take him?**

**Give your answer in hours and  
minutes.**

**(2 marks)**

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

**(Total for Question 6 is 7 marks)**

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**Turn over**

7. (a) Solve

$$5x = 20$$

(1 mark)

$$x = \underline{\hspace{10cm}}$$

(b) Simplify

$$3p \times 8q$$

(1 mark)

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(continued on the next page)

Turn over

**7. continued.**

**(c) Simplify**

$$8w - 4y + w - 3y$$

**(2 marks)**

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**(continued on the next page)**

**Turn over**

**7. continued.**

**(d) Factorise fully**

$$16 + 12t$$

**(2 marks)**

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**(Total for Question 7 is 6 marks)**

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**Turn over**

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

**It shows information about the grades some Year 9 students gained in a biology test and in a physics test. The highest grade is **A** and the lowest grade is **D****

**(a) How many students gained a grade **C** in biology?  
(2 marks)**

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**(continued on the next page)**

**Turn over**



**8. continued.**

**(b) How many students gained the same grade in biology as they gained in physics?**

**(2 marks)**

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**(continued on the next page)**

**Turn over**

**8. continued.**

**(c) How many students gained a higher grade in biology than they gained in physics?**

**(2 marks)**

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**(Total for Question 8 is 6 marks)**

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**Turn over**

- 9. Look at the diagram for Question 9 in the Diagram Booklet.**

**It shows two similar triangles,  $ABC$  and  $AED$ , drawn on a grid.**

**Each square length on the grid represents 1 cm**

**Find the area of the region  $R$ , shown shaded in the diagram in the Diagram Booklet.**

**(3 marks)**

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

**9. continued.**

\_\_\_\_\_ **cm<sup>2</sup>**

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

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**Turn over**

**10. (a) Show that**

$$\frac{3}{10} \div \frac{1}{4} = \frac{6}{5}$$

**(2 marks)**

**(continued on the next page)**

**Turn over**

**10. continued.**

**(b) Show that**

$$\frac{5}{6} - \frac{3}{4} = \frac{1}{12}$$

**(2 marks)**

**(Total for Question 10 is 4 marks)**

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**Turn over**

11. (a) Use your calculator to work out the value of

$$\frac{2.14^3 - 3.76}{\sqrt{1.24}}$$

Write down all the figures on your calculator display.

(2 marks)

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(continued on the next page)

Turn over

**11. continued.**

- (b) Write your answer to part (a)  
correct to 2 significant figures.  
(1 mark)**

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**(Total for Question 11 is 3 marks)**

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**12. Look at the diagram for Question 12 in the Diagram Booklet.**

**It shows shape P and shape Q on a grid.**

- (a) Describe fully the single transformation that maps shape P onto shape Q (3 marks)**

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**(continued on the next page)**

**Turn over**

**12. continued.**

**(b) On the grid, reflect shape **P** in  
the line with equation  $x = 5$**

**Label your shape **R****

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

**(2 marks)**

**(Total for Question 12 is 5 marks)**

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13. (a) Simplify  
 $m^8 \div m^2$   
(1 mark)

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(continued on the next page)

**13. continued.**

**(b) Expand and simplify**

$$(y - 3)(y + 1)$$

**(2 marks)**

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

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**Turn over**

**14. Look at the diagram for Question 14 in the Diagram Booklet.**

**It is NOT accurately drawn.**

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

$$\mathbf{AB = 30 \text{ cm}}$$

$$\mathbf{AC = 52 \text{ cm}}$$

$$\mathbf{BC = h \text{ cm}}$$

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

**Calculate the value of h**

**Give your answer correct to**

**3 significant figures.**

**(3 marks)**

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

**Turn over**

**14. continued.**

**$h =$  \_\_\_\_\_**

**(Total for Question 14 is 3 marks)**

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**Turn over**

**15. There are 54 fish in a tank.**

**Some of the fish are white and the rest of the fish are red.**

**Jeevan takes at random a fish from the tank.**

**The probability that he takes a white fish is  $\frac{4}{9}$**

**(a) Work out the number of white fish originally in the tank.**

**(2 marks)**

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

**15. (a) continued.**

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**(continued on the next page)**

**Turn over**



**15. continued.**

**Jeevan puts the fish he took out,  
back into the tank.**

**He puts some more white fish into the  
tank.**

**Jeevan takes at random a fish from  
the tank.**

**The probability that he takes a white  
fish is now  $\frac{1}{2}$**

**(b) Work out the number of white  
fish Jeevan put into the tank.  
(2 marks)**

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

**Turn over**

**15. (b) continued.**

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

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**Turn over**

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

**It is NOT accurately drawn.**

**It shows the front of a wooden door with a semicircular glass window.**

**The height of the door is 2 metres.**

**The width of the door is 0·75 metres.**

**The diameter of the semicircular glass window is 0·5 metres.**

**Julie wants to apply 2 coats of wood varnish to the front of the door, shown shaded in the diagram.**

**(continued on the next page)**

**Turn over**

**16. continued.**

**250 millilitres of wood varnish  
covers  $4 \text{ m}^2$  of the wood.**

**Work out how many millilitres of  
wood varnish Julie will need.**

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

**(5 marks)**

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

**16. continued.**

\_\_\_\_\_ millilitres

**(Total for Question 16 is 5 marks)**

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**Turn over**

**17. Look at Diagram 1 and Diagram 2 for Question 17 in the Diagram Booklet.**

**They are NOT accurately drawn.**

**Yasmin has some identical rectangular tiles.**

**Each tile is  $L$  cm by  $W$  cm as shown by Diagram 1**

**Using 9 of her tiles, Yasmin makes rectangle  $ABCD$ , shown by Diagram 2**

**The area of  $ABCD$  is  $1620 \text{ cm}^2$**

**(continued on the next page)**

**17. continued.**

**Work out the value of  $L$  and the  
value of  $W$   
(5 marks)**

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

**17. continued.**

**L = \_\_\_\_\_**

**W = \_\_\_\_\_**

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

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**Turn over**



**18. Alison buys 5 apples and 3 pears for a total cost of \$1.96**

**Greg buys 3 apples and 2 pears for a total cost of \$1.22**

**Michael buys 10 apples and 10 pears.**

**Work out how much Michael pays for his 10 apples and 10 pears.**

**Show your working clearly.  
(5 marks)**

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

**18. continued.**

**\$ \_\_\_\_\_**

**(Total for Question 18 is 5 marks)**

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**Turn over**

**19. Write  $3 \cdot 6 \times 10^3$  as a product of powers of its prime factors.**

**Show your working clearly.**

**(3 marks)**

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

**19. continued.**

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

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**Turn over**

**20. In 2018, the population of Sydney was 5.48 million.**

**This was 22% of the total population of Australia.**

**Work out the total population of Australia in 2018**

**Give your answer correct to 3 significant figures.**

**(3 marks)**

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

**20. continued.**

\_\_\_\_\_ million

**(Total for Question 20 is 3 marks)**

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**Turn over**

**21. (i) Solve the inequalities**

$$\mathbf{-7 \leq 2x - 3 < 5}$$

**(3 marks)**

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**(continued on the next page)**

**Turn over**

**21. continued.**

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

**It shows a number line.**

**On the number line, represent the  
solution set to part (i)**

**(2 marks)**

**(Total for Question 21 is 5 marks)**

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**22. Look at the diagram for Question 22 in the Diagram Booklet.**

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

**They are NOT accurate.**

**A solid aluminium cylinder has radius 10 cm and height  $h$  cm**

**The mass of the cylinder is 5.4 kg**

**The density of aluminium is**

**0.0027 kg/cm<sup>3</sup>**

**Calculate the value of  $h$**

**Give your answer correct to one decimal place.**

**(5 marks)**

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

**Turn over**

**22. continued.**

**Turn over**

**22. continued.**

**$h =$  \_\_\_\_\_**

**(Total for Question 22 is 5 marks)**

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**TOTAL FOR PAPER IS 100 MARKS**

**END OF PAPER**

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