

**Paper Reference 4MA1/1FR  
Pearson Edexcel  
International GCSE**

Total Marks

# **Mathematics A**

**Level 1/2**

**Paper 1FR**

**(Calculator)**

**Foundation Tier**

**Tuesday 21 May 2019 – Morning**

**Time: 2 hours 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>					

**V60259A**



Pearson

**YOU MUST HAVE**

**Ruler, protractor, compasses, writing and drawing equipment, calculator. Tracing paper may be used.**

**YOU WILL BE GIVEN**

**Diagram Book  
Formulae Pages**

# **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.**

**There may be spare copies of some diagrams.**

## **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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**Turn over**

**5**

**Answer ALL TWENTY FIVE  
questions.**

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

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

**Turn over**

1. (a) Write a number in each box so that each calculation is correct.

(i)  + 357 = 486

(ii)  × 23 = 1840

(2 marks)

(continued on the next page)

**1. continued.**

**Look at the diagram for Question 1(b)  
in the Diagram Book.**

**It shows four cards.**

**Each card has a number on it.**

**The four cards are arranged to make  
the number **2745****

**(b) (i) Show how the cards can be  
arranged to make the  
smallest number using all  
four cards.**



**(continued on the next page)**

**Turn over**

1. (b) continued.

(ii) Show how the cards can be arranged to make an even number using all four cards.

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(2 marks)

(Total for Question 1 is 4 marks)

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Turn over

**2. Look at the diagram for Question 2 in the Diagram Book.**

**The bar chart gives information about the area, in millions of hectares, of the land used in four countries to grow rice.**

**(a) In which of these four countries are 7 million hectares of land used to grow rice?**

**(1 mark)**

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**(continued on the next page)**

**Turn over**

**2. continued.**

**(b) How many millions of hectares of land are used to grow rice in China?**

**(1 mark)**

\_\_\_\_\_ **millions of hectares**

**(continued on the next page)**

**Turn over**

**2. continued.**

**In Thailand 10 million hectares of land are used to grow rice.**

**(c) Draw a bar on the bar chart to show this information.**

**(1 mark)**

**(continued on the next page)**

**2. continued.**

**More land is used to grow rice in India than in Cambodia.**

**(d) How many millions of hectares more?**

**Show your working clearly.**

**(2 marks)**

\_\_\_\_\_ **millions of**  
**hectares**

**(Total for Question 2 is 5 marks)**

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3. (a) Write  $0.72$  as a fraction.

Give your fraction in its simplest form.

(2 marks)

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(continued on the next page)

**3. continued.**

**(b) Write  $\frac{3}{4}$  as a percentage.**

**(1 mark)**

\_\_\_\_\_ %

**(continued on the next page)**

**Turn over**

**3. continued.**

**(c) Work out 65% of 720**

**(2 marks)**



**(continued on the next page)**

**Turn over**

**3. continued.**

**(d) Write these five numbers in order of size.**

**Start with the smallest number.**

**$0.43$     $\frac{9}{20}$     $40.5\%$     $\frac{4}{9}$     $0.427$**

**(2 marks)**

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

**Turn over**

**3. (d) continued.**

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**(Total for Question 3 is 7 marks)**

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**Turn over**

- 4. (a) Look at the diagram for Question 4(a) in the Diagram Book.**

**Each square on the grid represents a one centimetre square.**

**On the grid, draw a rectangle with a perimeter of 14 cm  
(2 marks)**

**(continued on the next page)**

**4. continued.**

**(b) Look at the diagram for Question 4(b) in the Diagram Book.**

**Each square on the grid represents a one centimetre square.**

**On the grid, draw a right-angled triangle with an area of  $12 \text{ cm}^2$  (2 marks)**

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

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**5. Look at the table for Question 5 in the Diagram Book.**

**It shows the temperature in each of five Canadian cities one day in January.**

**(a) Work out the difference between the temperature in Vancouver and the temperature in Edmonton.**

**(1 mark)**

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

5. (a) continued.

\_\_\_\_\_ °C

(continued on the next page)

Turn over

**5. continued.**

**The temperature in Yellowknife is  
lower than the temperature in Ottawa.**

**(b) How much lower?**

**(1 mark)**

\_\_\_\_\_ °C

**(continued on the next page)**

**Turn over**

**5. continued.**

**The temperature in Winnipeg was  $8^{\circ}\text{C}$  greater than the temperature in Quebec.**

**(c) Work out the temperature in Winnipeg.  
(1 mark)**

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

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

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**Turn over**

6. (a) Look at the diagram for Question 6(a) in the Diagram Book. It shows a circle with centre O

Write down the word from the box below that describes the line AB  
(1 mark)

sector	segment	tangent
chord	diameter	

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(continued on the next page)

Turn over

**6. continued.**

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

**It shows a circle with centre O**

**On the diagram, draw a radius of  
the circle.**

**(1 mark)**

**(continued on the next page)**

**6. continued.**

**(c) Look at the diagram for  
Question 6(c) in the  
Diagram Book.**

**It is NOT accurately drawn.**

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

**(1 mark)**

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

6. (c) continued.

\_\_\_\_\_○

**(Total for Question 6 is 3 marks)**

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**7. Bella buys**

**4 packets of sandwiches at £2·40**

**each packet**

**a bottle of water for £1·20**

**3 packets of crisps.**

**Bella pays with a £20 note.**

**She gets £5·75 change.**

**Each packet of crisps has the same price.**

**Work out the price of each packet of crisps.**

**(3 marks)**

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

**Turn over**

**7. continued.**

**Turn over**

7. continued.

£ \_\_\_\_\_

**(Total for Question 7 is 3 marks)**

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8. (a) Simplify

$$a + a + a + a$$

(1 mark)

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(continued on the next page)

Turn over

**8. continued.**

**(b) Simplify**

$$3c \times 5c$$

**(1 mark)**

---

**(continued on the next page)**

**Turn over**

**8. continued.**

**(c) Simplify**

$$3e + 7g + 5e - 4g$$

**(2 marks)**

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**(continued on the next page)**

**Turn over**

**8. continued.**

**(d) Solve**

$$\mathbf{x - 9 = 14}$$

**(1 mark)**

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

**(continued on the next page)**

**Turn over**

**8. continued.**

**(e) Factorise**

$$5y + 15$$

**(1 mark)**

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**(continued on the next page)**

**Turn over**

8. continued.

(f) Make  $y$  the subject of

$$H = 3y - w$$

(2 marks)

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

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**Turn over**

**9. A bag of 11 counters contains**

**3 purple counters**

**2 orange counters**

**6 white counters**

**A counter is going to be taken at  
random from the bag.**

**(continued on the next page)**

9. continued.

(a) Find the probability that the counter will be

(i) orange

---

(ii) not white

---

(iii) green

---

(3 marks)

(continued on the next page)

Turn over

9. continued.

A box of **12** toy cars contains

**3** red cars

**4** blue cars

**5** yellow cars

Some extra **red** cars are put in the  
box.

When a car is taken at random from  
the box, the probability that the car is  
yellow is  $\frac{1}{6}$

(continued on the next page)

Turn over

**9. continued.**

**(b) Work out the number of extra red cars that are put in the box.**

**(2 marks)**

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

9. (b) continued.



**(Total for Question 9 is 5 marks)**

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**10. Look at the diagram for Question 10 in the Diagram Book.**

**It shows a number machine.**

**(a) Work out the output when the input is 8**

**(1 mark)**



**(continued on the next page)**

**Turn over**

**10. continued.**

**(b) Work out the input when the  
output is 82  
(2 marks)**

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**(continued on the next page)**

**Turn over**

**10. continued.**

**The input is  $y$**

**(c) Find an expression, in terms of  $y$ , for the output.**

**(2 marks)**

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**(Total for Question 10 is 5 marks)**

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**Turn over**

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

**On the grid, draw the graph of  $y = 2x - 3$  for values of  $x$  from  $-1$  to  $5$**

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

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**Turn over**

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

**Three bags, A, B and C, each contain some marbles.**

**There is a total of 75 marbles in the three bags.**

**$\frac{1}{5}$  of the marbles are in bag A**

**There are 4 more marbles in bag B than in bag C**

**Work out the number of marbles in each bag.**

**(3 marks)**

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

**Turn over**

**12. continued.**

**Turn over**

**12. continued.**

**Bag A** \_\_\_\_\_

**Bag B** \_\_\_\_\_

**Bag C** \_\_\_\_\_

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

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**Turn over**

- 13. Potatoes cost 2 dollars per kg  
Carrots cost 3 dollars per kg**

**Alfred buys  $p$  kg of potatoes and  
 $c$  kg of carrots.**

**The total cost is  $T$  dollars.**

**Write down a formula for  $T$  in terms  
of  $p$  and  $c$**

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

---

**Turn over**

**14. (a) Look at the diagram for Question 14(a) in the Diagram Book.**

**It shows shape P on a coordinate grid.**

**On the grid, translate shape P by**

**the vector  $\begin{pmatrix} -5 \\ 2 \end{pmatrix}$**

**(1 mark)**

**(continued on the next page)**

**14. continued.**

**(b) Look at the diagram for Question 14(b) in the Diagram Book.**

**It shows shape Q and shape R on a coordinate grid.**

**Describe fully the single transformation that maps shape Q onto shape R**  
**(3 marks)**

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

**15. Look at the diagram for Question 15  
in the Diagram Book.**

**It is NOT accurately drawn.**

**It shows a cylinder.**

**The cylinder has radius  $8.2$  cm and  
height  $10$  cm**

**The cylinder is empty.**

**Pam pours  $1.5$  litres of water into  
the cylinder.**

**(continued on the next page)**

**15. continued.**

**Work out the depth of the water in the cylinder.**

**Give your answer correct to 1 decimal place.**

**(3 marks)**

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

15. continued.

\_\_\_\_\_ cm

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

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**Turn over**

**16. Each interior angle of a regular polygon is  $162^\circ$**

**Work out the number of sides the polygon has.**

**(3 marks)**

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

16. continued.

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

---

**Turn over**

17.  $\mathcal{E} = \{11, 12, 13, 14, 15, 16, 17, 18, 19, 20\}$

$$A = \{\text{even numbers}\}$$

$$B = \{\text{multiples of 3}\}$$

List the members of the set

(i)  $A \cap B$

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(continued on the next page)

Turn over

17. continued.

Remember:

$$\mathcal{E} = \{11, 12, 13, 14, 15, 16, 17, 18, \\ 19, 20\}$$

$$A = \{\text{even numbers}\}$$

$$B = \{\text{multiples of 3}\}$$

(ii)  $A \cup B$

---

(continued on the next page)

Turn over

17. continued.

Remember:

$$\mathcal{E} = \{11, 12, 13, 14, 15, 16, 17, 18, \\ 19, 20\}$$

$$A = \{\text{even numbers}\}$$

$$B = \{\text{multiples of 3}\}$$

(iii)  $A'$

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(Total for Question 17 is 3 marks)

---

Turn over

- 18. (a) Find the highest common factor (HCF) of 21 and 35**  
**(1 mark)**



**(continued on the next page)**

**18. continued.**

**(b) Write 720 as a product of its prime factors.**

**Show your working clearly.**

**(3 marks)**

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

**18. (b) continued.**

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**(continued on the next page)**

**Turn over**

18. continued.

(c) Find the smallest whole number that **720** can be multiplied by to give a square number.

(1 mark)

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

---

**Turn over**

**19. Lorenzo increases all the prices on his restaurant menu by 8%**

**Before the increase, the price of a dessert was \$4.25**

**(a) Work out the price of the dessert after the increase.**

**(3 marks)**

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

19. (a) continued.

\$ \_\_\_\_\_

(continued on the next page)

Turn over

**19. continued.**

**After the increase, the price of lasagne is \$9.45**

**(b) Work out the price of lasagne before the increase.**

**(3 marks)**

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

19. (b) continued.

\$ \_\_\_\_\_

**(Total for Question 19 is 6 marks)**

---

**Turn over**

**20. Look at the diagram for Question 20 in the Diagram Book.**

**It is NOT accurately drawn.**

**It shows isosceles triangle ABC**

$$\mathbf{AB = AC = 7.5 \text{ cm}}$$

**The height of the triangle is 6 cm**

**Calculate the area of the triangle.**

**(4 marks)**

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

**20. continued.**

**Turn over**

**20. continued.**

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

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

---

**Turn over**

**21. There are 10 people in a lift.  
These 10 people have a mean weight  
of 79.2 kg**

**3 of these people get out of the lift.  
These 3 people have a mean weight  
of 68 kg**

**Work out the mean weight of the  
7 people left in the lift.**

**(3 marks)**

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

21. continued.

\_\_\_\_\_ kg

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

---

**Turn over**

**22. (a) Simplify**

$$t^9 \div t^3$$

**(1 mark)**

---

**(b) Simplify**

$$w^5 \times w^7$$

**(1 mark)**

---

**(continued on the next page)**

**Turn over**

**22. continued.**

**(c) Simplify**

$$(5xy^2)^3$$

**(2 marks)**

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

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**Turn over**

**23. Change 22 metres per second to a speed in kilometres per hour.**

**Show your working clearly.**

**(3 marks)**

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

**22. continued.**

\_\_\_\_\_ **km/h**

**(Total for Question 23 is 3 marks)**

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**Turn over**

- 24. 3 years ago, the ratio of Tom's age to Clemmie's age was 2:7**  
**Tom is now 15 years old and**  
**Clemmie is now X years old.**

**Find the value of X**

**(3 marks)**

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

**24. continued.**

**X = \_\_\_\_\_**

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

---

**Turn over**

**25.**

$$\text{pressure} = \frac{\text{force}}{\text{area}}$$

**A box, in the shape of a cuboid, is going to be put on a table.**

**The whole of one face of the box will be in contact with the table.**

**The force exerted by the box on the table is always **105** newtons.**

**The box is **5** metres by **4** metres by **3** metres.**

**(continued on the next page)**

**Turn over**

**25. continued.**

**The greatest pressure exerted by the box on the table is  $P$  newtons/m<sup>2</sup>**

**The least pressure exerted by the box on the table is  $Q$  newtons/m<sup>2</sup>**

**Work out the value of  $P - Q$**

**(3 marks)**

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

**25. continued.**

**Turn over**

**25. continued.**

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

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**TOTAL FOR PAPER IS 100 MARKS**

**END OF PAPER**

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