

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.

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 Book
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.

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.

Turn over

Answer ALL TWENTY FIVE questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

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.

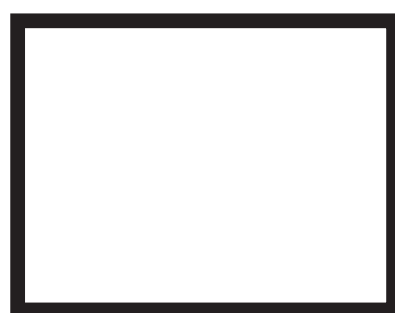
**Look at the diagram for Question 1(b)
in the Diagram Book.**

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.

--	--	--	--

(2 marks)

(Total for Question 1 is 4 marks)

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)

(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)

Turn over

3. (a) Write 0.72 as a fraction.

Give your fraction in its simplest form.

(2 marks)

(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.

(Total for Question 3 is 7 marks)

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 cm^2
(2 marks)**

(Total for Question 4 is 4 marks)

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°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)

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	

(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.**

Turn over

6. (c) continued.

○

(Total for Question 6 is 3 marks)

Turn over

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)

Turn over

8. (a) Simplify

$$a + a + a + a$$

(1 mark)

(continued on the next page)

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)

(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)

(continued on the next page)

Turn over

8. continued.

(f) Make y the subject of

$$\mathbf{H = 3y - w}$$

(2 marks)

(Total for Question 8 is 8 marks)

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)

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)**

(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)**

(Total for Question 10 is 5 marks)

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)

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)

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**

(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)**

(Total for Question 14 is 4 marks)

Turn over

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.**

Turn over

15. continued.

_____ **cm**

(Total for Question 15 is 3 marks)

Turn over

- 16. Each interior angle of a regular polygon is 162°**

Work out the number of sides the polygon has.

(3 marks)

Answer space continues on the next page.

16. continued.

(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) $A \cap B$

(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'

(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.

(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)

(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.

Turn over

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.

_____ **cm²**

(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)

(Total for Question 22 is 4 marks)

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)

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/m²

The least pressure exerted by the box on the table is Q newtons/m²

Work out the value of $P - Q$

(3 marks)

Answer space continues on the next two pages.

25. continued.

Turn over

25. continued.

(Total for Question 25 is 3 marks)

TOTAL FOR PAPER IS 100 MARKS

END OF PAPER
