

Paper Reference 4MA1/1F

Pearson Edexcel

International GCSE

Total Marks

Mathematics A

PAPER: 1F

Foundation Tier

(Calculator)

Time: 2 hours

**In the boxes below, write your name,
centre number and candidate number.**

Surname					
Other names					
Centre Number					
Candidate Number					

Y68795A



Pearson

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.

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

You may be provided with a model for Question 22

ADVICE

Read each question carefully before you start to answer it.

Check your answers if you have time at the end.

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

6

- 1. Look at the table for Question 1 in the Diagram Booklet.**

Nav found the table in the Diagram Booklet that shows the age, in years, of each of six cities.

- (a) Write down the name of the city with the greatest age.**

(1 mark)

(continued on the next page)

Turn over

1. continued.

(b) Write the number

2534 in words.

(1 mark)

(c) Write the number

2351 correct to the nearest ten.

(1 mark)

1. continued.

(d) Work out the difference between the age of Cadiz and the age of Nanjing.

(1 mark)

_____ years

(continued on the next page)

Turn over

1. continued.

A millennium is **1000** years.

(e) What is the age of Jenin in whole millenniums?

(1 mark)

_____ millenniums

(Total for Question 1 is 5 marks)

Turn over

2. (a) Simplify

$$12p + 3p - 7p$$

(1 mark)

(b) Simplify

$$8 \times 3q$$

(1 mark)

(continued on the next page)

Turn over

2. continued.

(c) Solve

$$\frac{r}{3} = 9$$

(1 mark)

r = _____

(Total for Question 2 is 3 marks)

Turn over

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

It shows a probability scale.

(continued on the next page)

3. continued.

In a fruit bowl, there are only

3 bananas

7 pears

Shimon is going to take at random

one of the fruits from the bowl.

**(a) Write down the letter of the arrow
that points to the probability that
Shimon takes**

(i) a pear,

(1 mark)

(continued on the next page)

Turn over

3. (a) continued.

Remember:

In a fruit bowl, there are only

3 bananas

7 pears

**Shimon is going to take at random
one of the fruits from the bowl.**

**Write down the letter of the arrow
that points to the probability that
Shimon takes**

(ii) a grape.

(1 mark)

(continued on the next page)

Turn over

3. continued.

Emma has some carrots, some potatoes and some onions in a bag. She says that the probability of taking at random a carrot from the bag is $\frac{1}{4}$

Emma is not correct.

(b) Explain why.

(1 mark)

(Total for Question 3 is 3 marks)

4. Look at the diagram for Question 4(a) in the Diagram Booklet.

It shows a polygon.

(a) Write down the mathematical name of the polygon.

(1 mark)

(continued on the next page)

Turn over

4. continued.

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

It shows a scale.

**(b) On the scale, mark the
number 360
(1 mark)**

(continued on the next page)

4. continued.

**Look at the diagram for Question 4(c)
in the Diagram Booklet.**

It shows a clock face.

**(c) Write down the time shown on
the clock face.**

(1 mark)

(continued on the next page)

Turn over

4. continued.

(d) Complete the sentence below by writing a suitable metric unit on the line.

(1 mark)

The length of a pen is

16 _____

(Total for Question 4 is 4 marks)

Turn over

5. Below is a list of seven numbers.

3 6 7 8 11 25 27

(a) From the numbers in the list,
write down

(i) an even number
(1 mark)

(continued on the next page)

Turn over

5. (a) continued.

Remember:

Below is a list of seven numbers

3 6 7 8 11 25 27

From the numbers in the list,
write down

(ii) a multiple of 9
(1 mark)



(continued on the next page)

Turn over

5. (a) continued.

Remember:

Below is a list of seven numbers

3 6 7 8 11 25 27

From the numbers in the list,
write down

(iii) a square number
(1 mark)



(continued on the next page)

Turn over

5. (a) continued.

Remember:

Below is a list of seven numbers

3 6 7 8 11 25 27

From the numbers in the list,
write down

(iv) a prime number
(1 mark)



(continued on the next page)

Turn over

5. continued.

(b) Use brackets to make the statement correct.

You may use more than one pair of brackets in the statement.

(1 mark)

$$2^2 + 5 \times 2 + 3^2 = 99$$

(Total for Question 5 is 5 marks)

Turn over

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

It is NOT accurately drawn.

It shows a straight line **ABC**

The angles x° and 48° are marked on the line.

(a) (i) Work out the value of **X**
(1 mark)

X = _____

(continued on the next page)

Turn over

6. (a) continued.

**(ii) Give a reason for your
answer to (i)
(1 mark)**

(continued on the next page)

6. continued.

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

It is NOT accurately drawn.

**It shows a quadrilateral $ABCF$ and
an equilateral triangle CDE , touching
at point C**

BCE and DCF are straight lines.

Angle $ABC = 105^\circ$

Angle $AFC = 125^\circ$

Angle $BAF = y^\circ$

(continued on the next page)

Turn over

6. continued.

(b) Work out the value of y

You must show your working.

(3 marks)

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

Turn over

6. (b) continued.

$$y = \underline{\hspace{15em}}$$

(Total for Question 6 is 5 marks)

Turn over

7. Sandeep buys some flowers.
He has **5000** rupees to spend.

He buys **6** carnations at **220** rupees each.

He also buys some roses at **295** rupees each.

Sandeep should receive **140** rupees in change from his **5000** rupees.

Work out how many roses Sandeep buys.

(4 marks)

Answer space is on the next two pages.

7. continued.

Turn over

7. continued.

(Total for Question 7 is 4 marks)

Turn over

8. (a) Simplify

$$12t - 8u - 5t + 6u$$

(2 marks)



(continued on the next page)

Turn over

8. continued.

Given that

$$X = 3y - 5z$$

(b) work out the value of X when

$$y = 12 \text{ and } z = 4$$

(2 marks)

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

(continued on the next page)

Turn over

8. continued.

(c) Solve

$$4p + 9 = 24$$

(2 marks)

Answer space continues on the
next page.

8. (c) continued.

$p =$ _____

(Total for Question 8 is 6 marks)

Turn over

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

It shows the line **AB**

ABC is a triangle.

AB = 8 cm, AC = 6 cm and

BC = 9 cm

Use a ruler and compasses to construct the triangle **ABC**

The side **AB** has been drawn for you in the Diagram Booklet.

You must show all your construction lines.

(Total for Question 9 is 2 marks)

10. Anjali wants to go on a boat at the seaside.

At the seaside there are **20** boats.

Of these boats

2 are white

5 are blue

7 are green

6 are yellow

Anjali selects at random one of these boats.

(continued on the next page)

Turn over

10. continued.

Write down the probability that she selects

- (i) a green boat,
(1 mark)



(continued on the next page)

Turn over

10. continued.

Write down the probability that she selects

(ii) a white boat or a yellow boat.

(2 marks)

(Total for Question 10 is 3 marks)

Turn over

11. Johan wants to make some small cakes.

He finds a recipe that says he needs 360 grams of flour to make 15 small cakes.

Johan has 0.85 kg of flour.

Johan works out how much flour he would need to make 38 small cakes, using the information given in the recipe.

(continued on the next page)

Turn over

11. continued.

**Does Johan have enough flour,
according to the recipe, to make
38 small cakes?**

Show your working clearly.

(4 marks)

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

11. continued.

Turn over

11. continued.

(Total for Question 11 is 4 marks)

Turn over

12. Look at the table for Question 12 in the Diagram Booklet.

It gives information about the number of gold stars won by each of 25 students in class 7T last week.

(a) Work out the mean number of gold stars won.

(3 marks)

Answer space continues on the next page.

12. (a) continued.



(continued on the next page)

Turn over

12. continued.

A student in class 8R is to be chosen at random.

The probability that this student won at least one gold star last week is 0.39

(b) Work out the probability that this student did NOT win at least one gold star last week.

(1 mark)

Answer space continues on the next page.

Turn over

12. (b) continued.

(Total for Question 12 is 4 marks)

Turn over

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

It shows a grid.

On the grid, draw the graph of

**$y = -2x + 3$ for values of x from
 -1 to 5**

(Total for Question 13 is 3 marks)

Turn over

14. In 2001, the total number of cars produced in the world was 39·8 million.

In 2006, the total number of cars produced in the world was 10·1 million greater than the total number produced in 2001

(continued on the next page)

14. continued.

(a) Express 10.1 million as a percentage of 39.8 million.

Give your answer correct to one decimal place.

(2 marks)

_____ %

(continued on the next page)

Turn over

14. continued.

In **2011**, the total number of cars produced in the world was **59.9** million.

In **2016**, the total number of cars produced in the world was **21%** greater than the total number produced in **2011**

In **2016**, the total number of cars produced in the world was **N** million.

(continued on the next page)

Turn over

14. continued.

(b) Work out the value of N

Give your answer correct to the nearest whole number.

(3 marks)

Answer space continues on the next page.

14. (b) continued.

N = _____

(Total for Question 14 is 5 marks)

Turn over

15. Look at the diagram for Question 15 in the Diagram Booklet.

It is NOT accurately drawn.

It shows a shape **ABCDEFG** made from a square **ABDF** and three identical isosceles triangles **BCD**, **DEF** and **FGA**

The perimeter of the square **ABDF** is **48 cm**

The perimeter of each isosceles triangle is **30 cm**

(continued on the next page)

Turn over

15. continued.

Work out the perimeter of the
shape **ABCDEFGG**

(4 marks)

Answer space continues on the next
page.

15. continued.

_____ cm

(Total for Question 15 is 4 marks)

Turn over

16. Below are the first five terms of an arithmetic sequence.

1 5 9 13 17

(a) Find an expression, in terms of n , for the n th term of this sequence.

(2 marks)

Answer space continues on the next page.

16. (a) continued.



(continued on the next page)

Turn over

16. continued.

The n th term of another arithmetic sequence is $3n + 5$

(b) Find an expression, in terms of m , for the $(2m)$ th term of this sequence.

(1 mark)

Answer space continues on the next page.

16. (b) continued.



(Total for Question 16 is 3 marks)

17. Look at the diagram and the table for Question 17 in the Diagram Booklet. The diagram shows a biased 4-sided spinner.

The table in the Diagram Booklet gives the probabilities that, when the spinner is spun once, it will land on 1 or it will land on 3

The probability that the spinner will land on 2 is equal to the probability that the spinner will land on 4

(continued on the next page)

Turn over

17. continued.

Ravina is going to spin the spinner a number of times.

Ravina works out that an estimate for the number of times the spinner will land on 3 is 45

**Work out an estimate for the number of times the spinner will land on 4
(4 marks)**

Answer space continues on the next page.

Turn over

17. continued.

(Total for Question 17 is 4 marks)

Turn over

18. (a) Find the highest common factor (HCF) of 56 and 84

Show your working clearly.

(2 marks)

Answer space continues on the next page.

18. (a) continued.



(continued on the next page)

Turn over

18. continued.

(b) Find the lowest common multiple (LCM) of 60 and 72

Show your working clearly.

(2 marks)

Answer space continues on the next page.

Turn over

18. (b) continued.



(Total for Question 18 is 4 marks)

Turn over

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

It is NOT accurately drawn.

It shows parts of three regular polygons, **A**, **B** and **C**, meeting at a point.

The internal angle shown for polygon **A** = $8x^\circ$

The internal angle shown for polygon **B** = $7x^\circ$

The internal angle shown for polygon **C** = $3x^\circ$

(continued on the next page)

Turn over

19. continued.

Polygon **B** has **n** sides.

Work out the value of **n**

(4 marks)

Answer space continues on the next
two pages.

Turn over

19. continued.

Turn over

19. continued.

n = _____

(Total for Question 19 is 4 marks)

20. (a) Expand and simplify

$$(n - 6)(n + 4)$$

(2 marks)



(continued on the next page)

Turn over

20. continued.

(b) Solve

$$2x - 3 = \frac{3x - 5}{4}$$

Show clear algebraic working.

(3 marks)

Answer space continues on the next page.

Turn over

20. (b) continued.

X = _____

(Total for Question 20 is 5 marks)

Turn over

21. Look at the table for Question 21(a) in the Diagram Booklet.

Asha bought an apartment.

The table in the Diagram Booklet gives information about the value of apartments, in euros, and the annual service charge band.

In 2021, the value of Asha's apartment was 634 400 euros.

The value of Asha's apartment had increased by 4% from its value in 2020

(continued on the next page)

Turn over

21. continued.

(a) Has the annual service charge band changed for Asha's apartment?

Show your working clearly.

(3 marks)

(continued on the next page)

Turn over

21. continued.

Pam bought a boat.

In each year after Pam bought the boat, the value of the boat depreciated by 15%

(b) Work out the total percentage by which the value of the boat had depreciated by the end of the second year after Pam bought the boat.

(3 marks)

Answer space is on the next page.

Turn over

21. (b) continued.

_____ %

(Total for Question 21 is 6 marks)

Turn over

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

You may be provided with a model.

They are NOT accurate.

They show a cylinder.

The cylinder is placed on the ground.

The height of the cylinder is 18 cm

The force exerted by the cylinder on the ground is 72 newtons.

The pressure on the ground due to the cylinder is 1.4 newtons/cm²

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

(continued on the next page)

Turn over

22. continued.

Work out the volume of the cylinder.

Give your answer correct to

3 significant figures.

(4 marks)

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

22. continued.

Turn over

22. continued.

_____ **cm³**

(Total for Question 22 is 4 marks)

Turn over

23. (a) Write

0·000 089 in standard form.

(1 mark)



(continued on the next page)

Turn over

23. continued.

(b) Write

**8.34×10^4 as an ordinary
number.**

(1 mark)

(Total for Question 23 is 2 marks)

Turn over

24. (a) Simplify

$$8 \times (4t)^0$$

(1 mark)

(continued on the next page)

Turn over

24. continued.

Given that

$$y^6 \div y^{-5} = y^p$$

(b) find the value of p
(1 mark)

$p =$ _____

(continued on the next page)

Turn over

24. continued.

(c) Simplify fully

$$(2k^2m^4)^3$$

(2 marks)

(Total for Question 24 is 4 marks)

Turn over

25. Two circles, C_1 and C_2 , are drawn on a centimetre grid, with a scale of 1 cm for 1 unit on each axis.

The centre of circle C_1 is at the point with coordinates $(-1, 3)$ and the radius of C_1 is 13 cm

The centre of circle C_2 is at the point with coordinates $(7, 18)$ and the radius of C_2 is 6 cm

(continued on the next page)

25. continued.

(a) Work out the distance between the centre of C_1 and the centre of C_2

(3 marks)

Answer space continues on the next two pages.

Turn over

25. (a) continued.

Turn over

25. (a) continued.

_____ cm

(continued on the next page)

Turn over

25. continued.

- (b) Explain why circle C_1 intersects circle C_2
(1 mark)

(Total for Question 25 is 4 marks)

TOTAL FOR PAPER IS 100 MARKS

END OF PAPER
