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					

Q68795A

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

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.

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.

Answer ALL TWENTY FIVE 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 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)

(b) Write the number **2534** in words.

(1 mark)

(continued on the next page)

1. continued.

(c) Write the number

2351 correct to the nearest ten.

(1 mark)

_____

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

(1 mark)

_____ years

(continued on the next page)

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)

2. (a) Simplify

$12p + 3p - 7p$

(1 mark)

_____

(b) Simplify

$8 \times 3q$

(1 mark)

_____

(c) Solve

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

(1 mark)

$r =$ _____

(Total for Question 2 is 3 marks)

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

It shows a probability scale.

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)

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)

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 $1 \cdot 4$

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)

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)

(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)

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)

(ii) a multiple of 9

(1 mark)

(continued on the next page)

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)

(iv) a prime number

(1 mark)

(continued on the next page)

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)

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)

$x =$ _____

(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°

Angle **AFC** = 125°

Angle **BAF** = y°

(b) Work out the value of **y**

You must show your working.

(3 marks)

Answer space continues on the next page.

6. (b) continued.

$y =$ _____

(Total for Question 6 is 5 marks)

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 continues on the next page.

7. continued.

(Total for Question 7 is 4 marks)

8. (a) Simplify

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

(2 marks)

(continued on the next page)

8. continued.

Given that

$X = 3y - 5z$

(b) work out the value of X when $y = 12$ and $z = 4$

(2 marks)

$X =$ _____

(continued on the next page)

8. continued.

(c) Solve

$$4p + 9 = 24$$

(2 marks)

p = _____

(Total for Question 8 is 6 marks)

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)

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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.

Write down the probability that she selects

(i) a green boat,

(1 mark)

(continued on the next page)

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)

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.

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 page.

11. continued.

(Total for Question 11 is 4 marks)

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)

(continued on the next page)

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)

(Total for Question 12 is 4 marks)

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)

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

(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)

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.

(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)

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**

Work out the perimeter of the shape **ABCDEFG**

(4 marks)

Answer space continues on the next page.

15. continued.

_____ cm

(Total for Question 15 is 4 marks)

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 nth term of this sequence.

(2 marks)

(continued on the next page)

16. continued.

The nth 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)

(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

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 is on the next page.

17. continued.

(Total for Question 17 is 4 marks)

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

56 and 84

Show your working clearly.

(2 marks)

(continued on the next page)

18. continued.

(b) Find the lowest common multiple (LCM) of

60 and **72**

Show your working clearly.

(2 marks)

(Total for Question 18 is 4 marks)

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** = $8x°$

The internal angle shown for polygon **B** = $7x°$

The internal angle shown for polygon **C** = $3x°$

Polygon **B** has n sides.

Work out the value of n

(4 marks)

Answer space continues on the next page.

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)

20. continued.

(b) Solve

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

Show clear algebraic working.

(3 marks)

Answer space continues on the next page.

20. (b) continued.

$x =$ _____

(Total for Question 20 is 5 marks)

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)

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)

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)

_____%

(Total for Question 21 is 6 marks)

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 $1 \cdot 4$ newtons/cm^2

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

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.

22. continued.

_____ cm^3

(Total for Question 22 is 4 marks)

23. (a) Write

$0 \cdot 000\,089$ in standard form.

(1 mark)

(b) Write

$8 \cdot 34 \times 10^4$ as an ordinary number.

(1 mark)

(Total for Question 23 is 2 marks)

24. (a) Simplify

$8 \times (4t)^0$

(1 mark)

Given that

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

(b) find the value of p

(1 mark)

p = _____

(continued on the next page)

24. continued.

(c) Simplify fully

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

(2 marks)

(Total for Question 24 is 4 marks)

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

(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 page.

25. (a) continued.

_____ cm

(continued on the next page)

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