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	

Q72435A

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.

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.

   It gives information about six plays written by William Shakespeare.

   (a) Which of these six plays has the greatest number of words?

   (1 mark)

   _____

   Two of these six plays were written in the same year.

   (b) Write down the name of each of these plays.

   (1 mark)

   _____ and _____

1.   continued.

The play Othello has **9329** more words in it than the play Macbeth.

(c)   Work out the number of words in the play Othello.

(1 mark)

_____

(d)   Write the number **21 055** in words.

(1 mark)

_____

_____

(Total for Question 1 is 4 marks)

Turn over

2.   Luca has **5 kg** of chopped tomatoes.

He also has some empty tins.

When full, each tin holds **350** grams of chopped tomatoes.

Luca fills as many tins as possible with the chopped tomatoes.

Work out the weight of the chopped tomatoes remaining after Luca has filled as many tins as possible.

Give the units of your answer.

(4 marks)

Answer space continues on the next page.

Turn over

2. **continued.**

(Total for Question 2 is 4 marks)

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

It shows a sequence of patterns made from squares.

(a)   **In the Diagram Booklet, Pattern number 4 has been started.**

Complete Pattern number 4

(1 mark)

(continued on the next page)

3. **continued.**

(b) Complete the table.

There are two spaces to fill.

(1 mark)

Pattern number	Number of squares
1	1
2	4
3	7
4	
5	

(c) Work out the number of squares in

Pattern number **8**

(1 mark)

_____

Turn over

3.   continued.

Angus says

"there are **42** squares in Pattern number **15**"

Angus is incorrect.

(d)   Explain why.

(1 mark)

_____

_____

_____

_____

_____

(Total for Question 3 is 4 marks)

4. (a) Write $0 \cdot 8$ as a percentage.

(1 mark)

_____%

(b) Write down the value of the **3** in the number

$4 \cdot 7634$

(1 mark)

_____

(continued on the next page)

4.   continued.

(c)   There are five decimals shown below.

Write these decimals in order of size.

Start with the smallest decimal.

0·204   0·24   0·04   0·2   0·042

(1 mark)

_____

(d)   Write **25·786 21** correct to **2** decimal places.

(1 mark)

_____

(continued on the next page)

4. **continued.**

    (e) **Find the square root of 1296**

       (1 mark)

       _____

(Total for Question 4 is 5 marks)

Turn over

5. Adam has eight packets of noodles.

    Here is the flavour of noodles in each packet.

    Hot and Spicy   Curry   Vegetarian

    Hot and Spicy   Curry   Hot and Spicy

    Curry   Hot and Spicy

    Adam takes at random a packet of noodles.

    Look at the diagram for Question 5(a)(i) in the

    Diagram Booklet.

    It shows a probability scale.

    (a) (i)   On the probability scale in the

               Diagram Booklet, mark the

               probability that Adam takes a packet of

               Hot and Spicy noodles.

               (1 mark)

5. (a) continued.

(ii) Circle the word in the list below that best describes the likelihood that Adam takes a packet of Vegetarian noodles.

(1 mark)

impossible   unlikely   even

likely   certain

(continued on the next page)

5. continued.

Belinda asks **20** people to name the type of rice that they each like the best.

Look at the information and the table for Question 5(b) in the Diagram Booklet.
It shows Belinda's results and a frequency table for the results.

(b) Complete the frequency table for Belinda's results.

(2 marks)

(Total for Question 5 is 4 marks)

6. Sandeep sells **600** tickets for an event.

    He receives a total of **$7200** from selling the tickets.

    $\frac{1}{4}$ of the tickets sold are child tickets.

    The rest of the tickets sold are adult tickets.

    The cost of an adult ticket is **$13·60**

    Work out the cost of a child ticket.

    (4 marks)

    Answer space continues on the next page.

6. **continued.**

$\$$_____

(Total for Question 6 is 4 marks)

7.   (a)   **Simplify**

   5p × 9k

   (1 mark)

_____

   (b)   **Simplify**

   3m + 2n + 8m − 7n

   (2 marks)

_____

(continued on the next page)

7. **continued.**

(c) Solve

$$2r + 7 = 16$$

(2 marks)

r = _____

(Total for Question 7 is 5 marks)

8. Look at the diagram for Question 8 in the
    Diagram Booklet.

    It shows a scale drawing showing the positions of
    Paris and Bordeaux.

    Alain drives from Paris to Bordeaux.

    The distance that he drives is **590 km**

    This distance is greater than the actual straight line
    distance between Paris and Bordeaux.

    How much greater?

    Show your working clearly.

    (4 marks)

    Answer space continues on the next page.

Turn over

8. **continued.**

_____ **km**

(Total for Question 8 is 4 marks)

9. Look at the diagram for Question 9 in the

    Diagram Booklet.

    It shows Avner's two fair spinners.

    Spinner **A** can land on **1**, **2** or **3**

    Spinner **B** can land on **1**, **2**, **3** or **4**

    Avner MULTIPLIES the number on which spinner **A**

    lands by the number on which spinner **B** lands to

    find his score.

    Look at the table for Question 9(a) in the

    Diagram Booklet.

    (a) Complete the table in the Diagram Booklet to

         show all possible scores.

         Seven of the scores have been completed

         for you.

         There are five spaces to fill.

         (2 marks)

Turn over

9. **continued.**

Avner spins spinner A once and spinner B once.

(b) **Find the probability that his score is an odd number.**

(1 mark)

_____

(Total for Question 9 is 3 marks)

10. Orange squash is made from orange juice and water.

Sean has two different cartons of orange squash, carton **P** and carton **Q**

Look at the information for Question 10 in the Diagram Booklet.

It gives information about the two cartons.

Work out the difference in the volume of orange juice in carton **P** and the volume of orange juice in carton **Q**

(3 marks)

Answer space continues on the next page.

10. continued.

_____ **millilitres**

(Total for Question 10 is 3 marks)

Turn over

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

On the grid in the Diagram Booklet, draw the graph of

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

(Total for Question 11 is 3 marks)

Turn over

12. **(a)** **Show that**

$$\frac{7}{8} - \frac{5}{12} = \frac{11}{24}$$

(2 marks)

(continued on the next page)

12. continued.

(b) Find the highest common factor (HCF) of

130 and **208**

Show your working clearly.

(2 marks)

Answer space continues on the next page.

12. **(b)** **continued.**

_____

(Total for Question 12 is 4 marks)

Turn over

13. (a) Given that

$$p = t - uv$$

$$t = 18$$
$$u = -3$$
$$v = 5$$

work out the value of **p**

(2 marks)

p = _____

Turn over

13. **continued.**

(b) **Make X the subject of the formula**

$$y = 3x + 10$$

(2 marks)

_____

(Total for Question 13 is 4 marks)

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

Describe fully the single transformation that maps triangle A onto triangle B

(2 marks)

_____

_____

_____

_____

_____

(continued on the next page)

14. continued.

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

Describe fully the single transformation that maps triangle **C** onto triangle **D**

(2 marks)

_____

_____

_____

_____

_____

(Total for Question 14 is 4 marks)

Turn over

15. Look at the diagram for Question 15 in the

Diagram Booklet.

It is NOT accurately drawn.

It shows a floor plan of a stage.

The plan is formed from a triangle and a rectangle.

The length of the rectangle is $4 \cdot 8$ metres.

The width of the rectangle is 3 metres.

The vertical height of the triangle is $2 \cdot 5$ metres.

The stage manager is going to paint the floor.

One tin of paint covers an area of $1 \cdot 8 \, m^2$

One tin of paint costs $\$16 \cdot 40$

Paint can only be bought in full tins.

The stage manager has $\$190$ to spend.

(continued on the next page)

Turn over

15. continued.

Does the stage manager have enough money to buy enough tins to paint all of the floor?

Show your working clearly.

(5 marks)

Answer space continues on the next page.

15. continued.

(Total for Question 15 is 5 marks)

Turn over

16. Look at the table for Question 16 in the Diagram Booklet.

80 students entered a dancing competition.

The table gives information about the length of time, in minutes, for which each student spent dancing.

Work out an estimate for the mean length of time the students spent dancing.

(4 marks)

Answer space continues on the next page.

16. continued.

_____ **minutes**

(Total for Question 16 is 4 marks)

17. **Solve**

$$3(2 - 4x) = 5 - 8x$$

Show clear algebraic working.

(3 marks)

Answer space continues on the next page.

17. continued.

x = _____

(Total for Question 17 is 3 marks)

18. **Look at the diagram for Question 18 in the Diagram Booklet.**

Use ruler and compasses only to construct the perpendicular bisector of line AB

You must show all your construction lines.

(Total for Question 18 is 2 marks)

19. Look at the diagram for Question 19 in the

Diagram Booklet.

It is NOT accurately drawn.

It shows a pentagon **ABCDE**

Angle **ABC = 119°**

Angle **BCD = 67°**

Angle **CDE = 135°**

DEA is a right angle

Angle **EAB** is marked **x°**

Work out the value of **x**

(3 marks)

Answer space continues on the next page.

19. continued.

x = _____

(Total for Question 19 is 3 marks)

20. In a box, there are only green sweets,

orange sweets and yellow sweets.

There are **280** sweets in the box so that

the number of green sweets : the number of

orange sweets **= 2 : 3**

and

the number of orange sweets : the number of

yellow sweets **= 1 : 5**

Work out how many green sweets there are in

the box.

(3 marks)

Answer space continues on the next two pages.

20. **continued.**

20. continued.

(Total for Question 20 is 3 marks)

21. Shane bought a car.

The amount Shane paid for the car was **$32 000**

Theresa also bought a car.

To pay for this car, Theresa paid a deposit of **$18 000** together with **14** monthly payments of **$1160**

Theresa paid more for her car than Shane paid for his car.

(a) Work out how much more Theresa paid as a percentage of the amount Shane paid.

(4 marks)

Answer space continues on the next page.

21. **(a)** **continued.**

_____%

(continued on the next page)

21. continued.

Kylie bought a van.

After **1** year, the value of the van was **$39 865**

During this year, the value of the van decreased by **15%**

(b) Work out the value of the van when Kylie bought it.

(3 marks)

$_____

(Total for Question 21 is 7 marks)

Turn over

22. Look at the table for Question 22 in the

Diagram Booklet.

Some members of a library were asked to name the

type of book that they each liked to read the best.

One of the members is chosen at random.

The table shows information about the probability

of the type of book that this member answered.

48 members answered comedy books.

Work out how many of the members answered

mystery books.

(4 marks)

Answer space continues on the next page.

Turn over

22. continued.

(Total for Question 22 is 4 marks)

23. Look at the diagram for Question 23 in the Diagram Booklet.

It is NOT accurately drawn.

The diagram shows a triangle **ABC** inside a semicircle.

A, **B** and **C** are points on the semicircle.

AB is the diameter of the semicircle.

Angle **ACB = 90°**

Angle **BAC = 50°**

AC = 18 cm

Work out the perimeter of the semicircle.

Give your answer correct to **2** significant figures.

(5 marks)

Answer space continues on the next two pages.

23. continued.

23. **continued.**

_____ **cm**

(Total for Question 23 is 5 marks)

24. **(a)** Write

$$6 \cdot 25 \times 10^{-4}$$

as an ordinary number.

(1 mark)

_____

(continued on the next page)

24. **continued.**

   (b) **Work out**

   $$(2 \cdot 4 \times 10^{12}) \div (9 \cdot 6 \times 10^{4})$$

   Give your answer in standard form.

   (2 marks)

_____

(Total for Question 24 is 3 marks)

Turn over

25. **(a)** **Factorise**

$$y^2 - 2y - 48$$

(2 marks)

_____

Look at the diagram for Question 25(b) in the Diagram Booklet.

(b) **Write down the inequality shown on the number line in the Diagram Booklet.**

(1 mark)

_____

(continued on the next page)

Turn over

25. **continued.**

    (c) Solve the inequality

$$7w + 6 > 12w + 14$$

       (3 marks)

———————————

(Total for Question 25 is 6 marks)

TOTAL FOR PAPER IS 100 MARKS

END OF PAPER