Total Marks

Mathematics A

Level 1/2
Paper 2FR
(Calculator)
Foundation Tier

Thursday 6 June 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				

Q60262A

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.

Answer ALL TWENTY SEVEN 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 Book.**

    The table shows the distance, in kilometres, from London to each of five cities.

    (a) **Write the number 9280 in words.**

    (1 mark)

    _____

    _____

    (b) **Which of the five cities is nearest to London?**

    (1 mark)

    _____

(continued on the next page)

Turn over

1. continued.

(c) Write down the value of the **7** in

10 734

(1 mark)

_____

(d) Which of the five cities is **seven thousand nine hundred and sixty two** kilometres from London?

(1 mark)

_____

(e) Write the number

16 983 correct to the nearest thousand.

(1 mark)

_____

(Total for Question 1 is 5 marks)

Turn over

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

   The incomplete pictogram shows information about the number of naan breads sold in a restaurant each day from Wednesday to Saturday.

   (a) How many naan breads were sold on Wednesday?

   (1 mark)

   _____

(continued on the next page)

2.   continued.

More naan breads were sold on Saturday than were sold on Friday.

(b) How many more?
     (2 marks)

_____

12 naan breads were sold in the restaurant on Sunday.

(c) Show this information on the pictogram.
     (1 mark)

(continued on the next page)

2.   continued.

The manager of the restaurant says,

"More than **100** naan breads were sold in the restaurant from Wednesday to Sunday."

(d)   Is the manager correct?

You must show your working.

(2 marks)

_____

_____

(Total for Question 2 is 6 marks)

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

   Diagram Book.

   It shows a pentagon.

   (a) **Write down the word from the box that**

       describes the angle marked X

       (1 mark)

acute	obtuse	reflex	right

   _____ **angle**

(continued on the next page)

3.   continued.

(b) Look at the diagram for Question 3(b) in the
     Diagram Book.
     Write down the mathematical name of the
     polygon shown.
     (1 mark)

       _____

(Total for Question 3 is 2 marks)

4. Imran throws an ordinary fair dice.

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

    On the probability scale, mark the probability that the dice will land on **10**

    (1 mark)

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

    On the probability scale, mark the probability that the dice will land on an odd number.

    (1 mark)

(Total for Question 4 is 2 marks)

Turn over

5. **Here is a list of eight numbers.**

10   23   27   30   42   52   74   81

From the list, write down

(i)   a square number

_____

(ii) a factor of 50

_____

(iii) a prime number.

_____

(Total for Question 5 is 3 marks)

6. **(a)** **Work out the value of**

$$\frac{9 \cdot 24 \times 4 \cdot 35}{6 \cdot 57 + 2 \cdot 19}$$

Give your answer as a decimal.

Write down all the figures on your calculator display.

(2 marks)

_____

(continued on the next page)

Turn over

6. continued.

    (b) Give your answer to part (a) correct to

        2 significant figures.

        (1 mark)

_____

(Total for Question 6 is 3 marks)

Turn over

7. Look at the diagram for Question 7 in the

    Diagram Book.

    It shows points **A, B, C, D** and **E** marked on a

    coordinate grid.

    (a) Write down the coordinates of point **B**

         (1 mark)

         (——————— , ———————)

    (b) Write down the letter of the point with

         coordinates **(2, −2)**

         (1 mark)

         ———————————————

(continued on the next page)

Turn over

7. continued.

    (c) **Find the coordinates of the midpoint of AC**

        (2 marks)

(_____ , _____)

(Total for Question 7 is 4 marks)

Turn over

8. Sandeep has **1200** rupees to spend on pencils.

Each pencil costs **45** rupees.

Sandeep buys as many pencils as he can.

Work out how much change Sandeep should get.

(3 marks)

Answer space continues on the next page.

8.   continued.

_____ **rupees**

(Total for Question 8 is 3 marks)

9.   **Anjali travels from Beijing to Shanghai by train.**

The train leaves Beijing at 07 25

The train arrives in Shanghai at 13 15 the same day.

Work out how long the train takes to travel from Beijing to Shanghai.

Give your answer in hours and minutes.

(2 marks)

Answer space continues on the next page.

9. **continued.**

_____ hours _____ minutes

(Total for Question 9 is 2 marks)

10. Look at the diagram for Question 10(a) in the

Diagram Book.

It is NOT accurately drawn.

It shows kite **ABCD**

AB = AD

BC = CD

Angle **BCD = 140°**

Angle **BAD** is marked **x**

Angle **ABC** is a right angle.

(a) Work out the size of the angle marked **x**

(2 marks)

_____ °

Turn over

10. continued.

Look at the diagram for Question 10(b) in the Diagram Book.

It is NOT accurately drawn.

It shows kite **PQRS**

PQ = 33 cm

QR = 12 cm

Angle **PQR** is a right angle.

(b) Work out the area of kite **PQRS**

(2 marks)

_____ cm^2

(Total for Question 10 is 4 marks)

Turn over

11. Look at the diagram for Question 11 in the

Diagram Book.

It is NOT accurately drawn.

It shows a brick and a crate.

Karl has **5700** bricks.

He wants to put all the bricks into crates.

Each brick is a cuboid measuring **9 cm** by **3 cm** by **5 cm**

Each crate is a cuboid measuring **72 cm** by **36 cm** by **75 cm**

Karl has **4** crates.

Is there enough room in the **4** crates for **5700** bricks?

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 Book.

Ravina counts the number of matches in each of

40 boxes of matches.

The table shows information about her results.

(a) Find the median of the numbers of matches in

the boxes.

(2 marks)

_____

(continued on the next page)

Turn over

12. continued.

(b) Work out the mean number of matches.

(3 marks)

_____

(Total for Question 12 is 5 marks)

Turn over

13. **(a)** **Solve**

$$3f - 5 = 11$$

(2 marks)

f = _____

(b) **Expand**

w(w + 3)

(1 mark)

_____

Turn over

13. continued.

   (c) Work out the value of y when $e = -3$

       given that $y = 5e^2 + 20$

       (2 marks)

$y =$ _____

(continued on the next page)

13. **continued.**

   (d) **Factorise**

$$x^2 - 5x - 36$$

   (2 marks)

_____

(Total for Question 13 is 7 marks)

Turn over

14. Look at the information for Question 14 in the Diagram Book.

Maria is going to make blackcurrant pies.

The information shows a list of ingredients to make 6 blackcurrant pies.

Maria has the following ingredients.

755 grams of flour

1265 grams of blackcurrants

685 grams of sugar

950 grams of butter

Work out the greatest number of blackcurrant pies that Maria can make using her ingredients.

Show your working clearly.

(4 marks)

Answer space continues on the next two pages.

Turn over

14. **continued.**

14. continued.

(Total for Question 14 is 4 marks)

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

    The graph shown can be used to find the distance travelled, in kilometres, by Chuck's car and the amount of petrol, in litres, used.

    Chuck travels **150** kilometres in his car.

    (a) Using the graph, find the amount of petrol used. (1 mark)

    _____ litres

(continued on the next page)

Turn over

15. continued.

Chuck lives in Fiji.

He puts petrol into the petrol tank of his car.

This petrol costs him $10 \cdot 15$ Fiji dollars.

1 litre of petrol in Fiji costs $2 \cdot 03$ Fiji dollars.

(b) Find the distance that Chuck's car travels on the petrol he put in his car.

(3 marks)

_____ kilometres

(Total for Question 15 is 4 marks)

Turn over

16. Look at the diagram for Question 16 in the Diagram Book.

    The scale diagram shows the position of two statues, **A** and **B**, on a map.

    (a) Measure the bearing of **B** from **A**

    (1 mark)

    _____ °

    Another statue **C** is on a bearing of **120°** from **B**

    Statue **C** is **4·5 km** from **B**

    (b) Mark the position of statue **C**

    Label it **C**

    (3 marks)

(Total for Question 16 is 4 marks)

Turn over

17. (a) Look at the diagram for Question 17(a) in the Diagram Book.

Write down the inequality shown on the number line.

(1 mark)

_____

(continued on the next page)

17. continued.

(b) **Solve the inequality**

$$4y - 13 \leq y + 8$$

(2 marks)

_____

(Total for Question 17 is 3 marks)

Turn over

18. **Show that**

$$5\frac{2}{3} - 2\frac{3}{4} = 2\frac{11}{12}$$

(Total for Question 18 is 3 marks)

Turn over

19. (a) Complete the table of values below for

$y = 1 + 5x - x^2$

There are four spaces to fill.

(2 marks)

x	y
−1	
0	1
1	
2	7
3	7
4	
5	1
6	

(continued on the next page)

Turn over

19. continued.

(b) Look at the diagram for Question 19(b) in the Diagram Book.

On the grid, draw the graph of

$y = 1 + 5x - x^2$ for values of x from

−1 to **6**

(2 marks)

(Total for Question 19 is 4 marks)

Turn over

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

    It is NOT accurately drawn.

    ABC and **DEF** are similar triangles.

    AB = 12 cm

    BC = 16 cm

    EF = 40 cm

    Angle **ABC** = Angle **DEF**

    Angle **BAC** = Angle **EDF**

    Angle **ACB** = Angle **DFE**

    (a) Work out the length of **DE**

    (2 marks)

    _____ cm

(continued on the next page)

Turn over

20. continued.

The area of triangle **DEF** is **525 cm^2**

(b) Find the area of triangle **DEF** in m^2

(2 marks)

_____ m^2

(Total for Question 20 is 4 marks)

21. Look at the table for Question 21 in the Diagram Book.

There are some ice lollies in a freezer.

The flavour of each ice lolly is banana or strawberry or mint or chocolate.

Julius takes at random an ice lolly from the freezer.

The table shows the probabilities that the flavour of the ice lolly that Julius takes is banana or strawberry or chocolate.

Work out the probability that the flavour of the ice lolly that Julius takes is either strawberry or mint.
(3 marks)

Answer space continues on the next page.

21. continued.

(Total for Question 21 is 3 marks)

22. A football team played **55** games.

Each game was won, drawn or lost.

number of games won : number of games drawn :

number of games lost = **6 : 3 : 2**

Work out how many more games the team won than

the team lost.

(Total for Question 22 is 3 marks)

Turn over

23.

$A = 3^2 \times 5^4 \times 7$

$B = 3^4 \times 5^3 \times 7 \times 11$

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

A and **B**

(2 marks)

_____

(continued on the next page)

23. continued.

Remember:

$$A = 3^2 \times 5^4 \times 7$$
$$B = 3^4 \times 5^3 \times 7 \times 11$$

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

A and **B**

(2 marks)

_____

(Total for Question 23 is 4 marks)

Turn over

24. **(a)** Write

840 000 in standard form.

(1 mark)

_____

(b) Work out

$(6 \times 10^7) \div (8 \times 10^{-2})$

Give your answer in standard form.

(2 marks)

_____

(Total for Question 24 is 3 marks)

Turn over

25. Henri buys a yacht for 150 000 euros.

The yacht depreciates in value by **18%** each year.

Work out the value of the yacht at the end of

3 years.

Give your answer correct to the nearest euro.

_____ **euros**

(Total for Question 25 is 3 marks)

26. **Look at the diagram for Question 26 in the**

Diagram Book.

Line L is drawn on the grid.

Find an equation for L

_____

(Total for Question 26 is 3 marks)

27. Look at the diagram for Question 27 in the

Diagram Book.

It is NOT accurately drawn.

Triangle **ABD** and triangle **CBD** are joined to make

triangle **ABC**

BC = 3·1 metres

Angle **ABD = 42°**

Angle **BCD = 32°**

Angle **ADB** and **BDC** are right angles.

Calculate the length of **AB**

Show your working clearly.

Give your answer correct to **3** significant figures.

(5 marks)

Answer space continues on the next two pages.

27. **continued.**

27. continued.

_____ **metres**

(Total for Question 27 is 5 marks)

TOTAL FOR PAPER IS 100 MARKS

END OF PAPER