

Mathematics
PAPER 1 (Non-Calculator)
Foundation Tier

Total Marks

Thursday 16 May 2024 – Morning

Time: 1 hour 30 minutes

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

Surname					
Other names					
Centre Number					
Candidate Number					

YOU MUST HAVE

Ruler, protractor, pair of compasses, writing and drawing equipment, Formulae Booklet (enclosed). Tracing paper may be used.

YOU WILL BE GIVEN

A separate Diagram Booklet

You may be given a cut out shape for Question 19.

INSTRUCTIONS

Answer ALL questions.

Answer the questions in the spaces provided in this Question Paper or in the separate Diagram Booklet – there may be more space than you need.

You must show all your working.

Diagrams are NOT accurately drawn, unless otherwise indicated.

Calculators may not be used.

INFORMATION

The total mark for this paper is 80

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.

Try to answer every question.

Check your answers if you have time at the end.

Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

- 1. Write the number 18 475 correct to the nearest thousand.**

(Total for Question 1 is 1 mark)

- 2. Write 0.3 as a percentage.**

_____ %

(Total for Question 2 is 1 mark)

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

The diagram is NOT accurately drawn.

The diagram shows an angle labelled y .

Write down the mathematical name for the type of angle marked y .

(Total for Question 3 is 1 mark)

4. Write these five numbers in order of size.

Start with the smallest number.

0.21

0.2

0.03

0.1

0.16

(Total for Question 4 is 1 mark)

5. Find the square root of 64

(Total for Question 5 is 1 mark)

6. Ryan buys

4 cakes at £1·30 each

2 identical tins of soup.

Ryan pays with a £10 note.

He gets £1·80 change.

How much does Ryan pay for each tin of soup?

£ _____

(Total for Question 6 is 4 marks)

Turn over

7. The table below shows the number of hours that Lena and Pavel worked on each of four days last week.

	Lena	Pavel
Wednesday	6	7
Thursday	9	6
Friday	8	5
Saturday	6	6

Look at the diagram for Question 7 in the separate Diagram Booklet.

The diagram is a grid.

On the grid, create a suitable diagram or chart for this information.

(Total for Question 7 is 4 marks)

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

The diagram is NOT accurately drawn.

The diagram shows three straight lines OA, OB and OC.

$$\text{Angle AOC} = 220^\circ$$

$$\text{Angle AOB} = x$$

$$\text{Angle BOC} = 90^\circ$$

- (i) Work out the size of the angle marked X.
(2 marks)

X = _____ °

(continued on the next page)

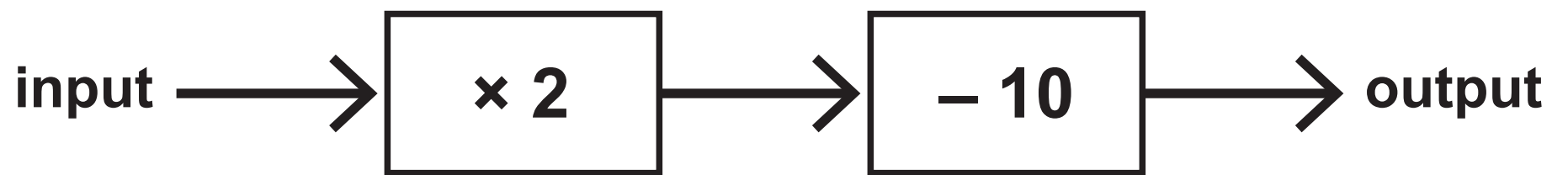
8. continued.

(ii) Give a reason for your answer.

(1 mark)

(Total for Question 8 is 3 marks)

9. Look at the number machine below.



(a) Work out the output when the input is 13

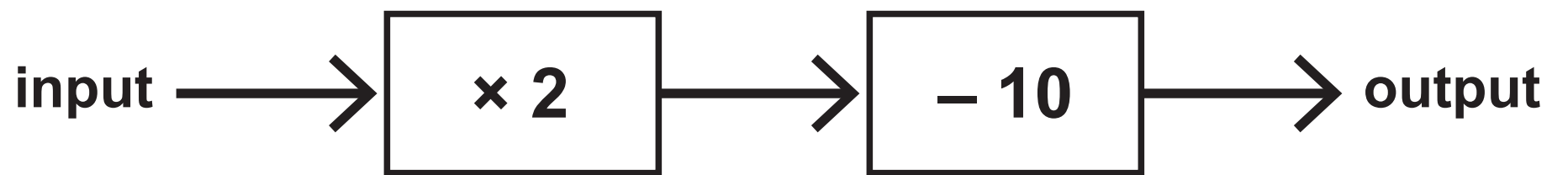
(1 mark)

(b) Work out the input when the output is 28

(2 marks)

(continued on the next page)

9. continued.



(c) Show that there is a number for which the output is the same as the input.

(2 marks)

(Total for Question 9 is 5 marks)

10. There are **24** cows and **36** sheep on a farm.

Write as a ratio the number of cows to the number of sheep.

Give your ratio in its simplest form.

(Total for Question 10 is 2 marks)

11. (a) Work out $-12 \div -4$
(1 mark)
-

- (b) Find the value of 2^5
(1 mark)
-

- (c) Write ONE pair of brackets in this calculation so that the answer is correct.
(1 mark)

$$30 \div 3 + 2 - 4 = 2$$

(Total for Question 11 is 3 marks)

12. Look at the diagram for Question 12 in the separate Diagram Booklet.

The diagram is NOT accurately drawn.

The diagram shows a triangle labelled ABC and a rectangle labelled $PQRS$.

In the triangle ABC :

$$AB = 36 \text{ cm}$$

$$AC = 30 \text{ cm}$$

$$BC = 14 \text{ cm}$$

In the rectangle $PQRS$:

PQ shows the length of the rectangle.

$$PS = 4 \text{ cm}$$

The perimeter of the rectangle is a quarter of the perimeter of the triangle.

Work out the length of the rectangle.

(4 marks)

Answer space continues on the next page.

12. continued.

_____ cm

(Total for Question 12 is 4 marks)

13. (a) There are only £10 notes and £20 notes in a wallet.

Ali takes at random a note from the wallet.

Write down the probability that Ali takes a note with a value of more than £5
(1 mark)

(continued on the next page)

13. continued.

(b) There are only 1p coins and 2p coins in a bag.

The total value of the coins in the bag is 40p

The total value of the 1p coins is the same as the total value of the 2p coins.

Simon takes at random a coin from the bag.

Find the probability that Simon takes a 1p coin.

(2 marks)

(Total for Question 13 is 3 marks)

Turn over

- 14. Work out 273×54**
(3 marks)

Answer space continues on the next page.

14. continued.

(Total for Question 14 is 3 marks)

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

It shows a stem and leaf diagram.

Tessa recorded the times that 15 adults took to complete a run.

She showed her results in the stem and leaf diagram.

(a) Find the median.

(1 mark)

_____ minutes

(b) Find the range.

(2 marks)

_____ minutes

(continued on the next page)

15. continued.

(c) Tessa also recorded the times that 15 children took to complete the run.

For the children, the median was 75 minutes.

Compare the times that the adults took with the times that the children took.

(1 mark)

(Total for Question 15 is 4 marks)

16. Batteries are sold in packs of 4, in packs of 8 and in packs of 12

4 batteries £1·80	8 batteries £3·20	12 Batteries £6·00
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A pack of 4 batteries costs £1·80

A pack of 8 batteries costs £3·20

A pack of 12 batteries costs £6·00

Which pack gives the best value for money?

You must show how you get your answer.

(3 marks)

Answer space continues on the next page.

16. continued.

(Total for Question 16 is 3 marks)

17. Solve $2(4x - 5) = 18$

X = _____

(Total for Question 17 is 3 marks)

18. Write down the value of 10^0

(Total for Question 18 is 1 mark)

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

The diagram shows Triangle A and Triangle B on a coordinate grid.

Describe fully the SINGLE transformation that maps Triangle A onto Triangle B.

You may be given a cut out triangle for this question.

(Total for Question 19 is 2 marks)

20. Here are the first four terms of an arithmetic sequence.

1 5 9 13

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

(Total for Question 20 is 2 marks)

21. (a) Work out $3\frac{4}{5} - 1\frac{2}{3}$
(2 marks)

(continued on the next page)

21. continued.

(b) Kevin was asked to work out $2\frac{1}{3} \times \frac{5}{8}$

Here is his working and his answer.

$$2\frac{1}{3} \times \frac{5}{8} = \frac{7}{3} \times \frac{5}{8}$$

$$= \frac{35}{24}$$

$$= 1\frac{9}{24}$$

Kevin's answer is wrong.

What mistake has Kevin made?

(1 mark)

Answer space continues on the next page.

Turn over

21. (b) continued.

(Total for Question 21 is 3 marks)

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

The diagram is NOT accurately drawn.

The diagram shows a plan of a floor labelled **ABCDEF.**

In the diagram:

$$\mathbf{AB = 10\ m}$$

$$\mathbf{BC = 5\ m}$$

$$\mathbf{EF = 6\ m}$$

$$\mathbf{FA = 8\ m}$$

Petra is going to cover the floor with paint.

Petra has 3 tins of paint.

There are 2.5 litres of paint in each tin.

Petra thinks 1 litre of paint will cover $10\ \text{m}^2$ of floor.

(continued on the next page)

22. continued.

(a) Assuming Petra is correct, does she have enough paint to cover the floor?

You must show all your working.

(4 marks)

22. continued.

(b) Actually, 1 litre of paint will cover 11 m^2 of floor.

Does this affect your answer to part (a)?

You must give a reason for your answer.

(1 mark)

(Total for Question 22 is 5 marks)

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

The diagram shows a Venn diagram with Set P and Set Q.

- (a) Write down the numbers that are in set P'**
(1 mark)

(continued on the next page)

23. continued.

(b) A number is chosen at random from the universal set, \mathcal{E}

Find the probability that this number is in the set $P \cup Q$
(2 marks)

(Total for Question 23 is 3 marks)

24. Sophie drives a distance of **513** kilometres on a motorway in France.
She pays **0·81** euros for every **10** kilometres she drives.

(a) Work out an estimate for the total amount that Sophie pays.

(3 marks)

_____ euros

(continued on the next page)

24. continued.

(b) Is your answer to part (a) an underestimate or an overestimate?

Give a reason for your answer.

(1 mark)

(Total for Question 24 is 4 marks)

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

The diagram shows a straight line L drawn on a coordinate grid.

Find an equation for L .

(3 marks)

(continued on the next page)

25. continued.

(b) M is a different straight line with equation $y = 5x$

Write down the equation of a straight line parallel to M.

(1 mark)

(Total for Question 25 is 4 marks)

26. Kasim has some small jars, some medium jars and some large jars.

He has a total of 400 jars.

$\frac{3}{8}$ of the 400 jars are empty.

For the empty jars,

number of small jars : number of medium jars = 3 : 4

number of medium jars : number of large jars = 1 : 2

Work out the percentage of Kasim's jars that are empty small jars.

(5 marks)

Answer space continues on the next page.

26. continued.

_____ %

(Total for Question 26 is 5 marks)

Turn over

27. In a sale, normal prices are reduced by 30%

The sale price of a TV is £280

Work out the normal price of the TV.

£ _____

(Total for Question 27 is 2 marks)

28. Solve $x + 11 \leq 5 - \frac{1}{2}x$

(Total for Question 28 is 3 marks)

TOTAL FOR PAPER IS 80 MARKS
END OF PAPER
