

Mathematics  
PAPER 1 (Non-Calculator)  
Foundation Tier

Total Marks
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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**

## **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.**

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

**Turn over**

## **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)**

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- 2. Write 0.3 as a percentage.**

\_\_\_\_\_ %

**(Total for Question 2 is 1 mark)**

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**Turn over**

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\_\_\_\_\_

- 4. Write these five numbers in order of size.  
Start with the smallest number.**

**0.21****0.2****0.03****0.1****0.16**

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**(Total for Question 4 is 1 mark)**

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- 5. Find the square root of 64**

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**(Total for Question 5 is 1 mark)**

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**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?**

**(4 marks)**

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

**6. continued.**

**£** \_\_\_\_\_

**(Total for Question 6 is 4 marks)**

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**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)

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**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.**

**Angle AOC =  $220^\circ$**

**Angle AOB =  $x$**

**Angle BOC =  $90^\circ$**

**(i) Work out the size of the angle marked  $x$ .**

**(2 marks)**

**$x =$**

**\_\_\_\_\_**

**o**

**8. continued.**

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

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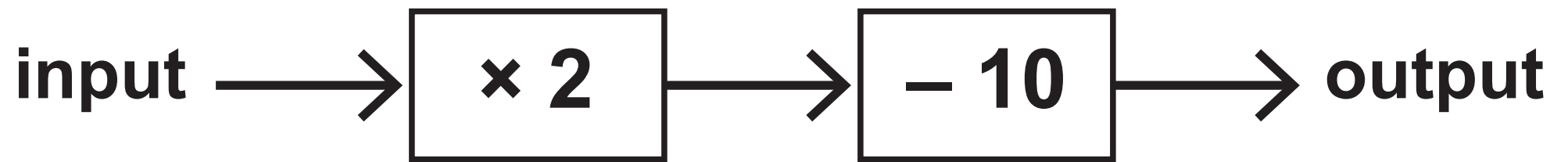
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**(Total for Question 8 is 3 marks)**

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9. Look at the number machine below.



- (a) Work out the output when the input is 13  
(1 mark)

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(continued on the next page)

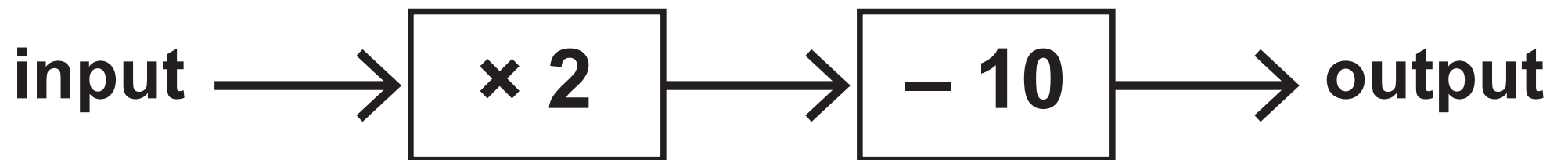
**9. continued.**

**(b) Work out the input when the output  
is 28  
(2 marks)**

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**(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)**

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

**9. (c) continued.**

**(Total for Question 9 is 5 marks)**

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**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.**

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**(Total for Question 10 is 2 marks)**

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**Turn over**



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

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

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**(continued on the next page)**

**11. continued.**

**(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)**

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**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:**

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

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

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

**In the rectangle PQRS:**

**PQ shows the length of the rectangle.**

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

**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.**

**Turn over**

12. continued.

\_\_\_\_\_ cm

**(Total for Question 12 is 4 marks)**

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**Turn over**

**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)**

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**(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)**

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

**Turn over**

**13. (b) continued.**

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**(Total for Question 13 is 3 marks)**

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**Turn over**

**14. Work out  $273 \times 54$**   
**(3 marks)**

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



**14. continued.**

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**(Total for Question 14 is 3 marks)**

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**Turn over**

**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

**(continued on the next page)**

**15. continued.**

**(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)**

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**(Total for Question 15 is 4 marks)**

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**Turn over**

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

<b>4 batteries</b> <b>£1·80</b>	<b>8 batteries</b> <b>£3·20</b>	<b>12 Batteries</b> <b>£6·00</b>
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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)**

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**Turn over**

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

**X = \_\_\_\_\_**

**(Total for Question 17 is 3 marks)**

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**Turn over**

18. Write down the value of  $10^0$

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**(Total for Question 18 is 1 mark)**

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**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.**

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**(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.**

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**(Total for Question 20 is 2 marks)**

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**Turn over**

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

21. continued.

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

Here is his working and his answer.

$$\begin{aligned} 2\frac{1}{3} \times \frac{5}{8} &= \frac{7}{3} \times \frac{5}{8} \\ &= \frac{35}{24} \\ &= 1\frac{9}{24} \end{aligned}$$

Kevin's answer is wrong.

What mistake has Kevin made?

(1 mark)

Answer space continues on the next page.

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Turn over

**21. (b) continued.**

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**(Total for Question 21 is 3 marks)**

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**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:**

**$AB = 10 \text{ m}$**

**$BC = 5 \text{ m}$**

**$EF = 6 \text{ m}$**

**$FA = 8 \text{ m}$**

**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)**

**Turn over**

**22. continued.**

- (a) Assuming Petra is correct, does she have enough paint to cover the floor?  
You must show all your working.  
(4 marks)**

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

**22. (a) continued.**

**(continued on the next page)**

**Turn over**



**22. continued.**

**(b) Actually, 1 litre of paint will  
cover  $11 \text{ m}^2$  of floor.**

**Does this affect your answer to  
part (a)?**

**You must give a reason for  
your answer.**

**(1 mark)**

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**(Total for Question 22 is 5 marks)**

**Turn over**

**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)**

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**(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)**

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**(Total for Question 23 is 3 marks)**

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**Turn over**

**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**

**24. continued.**

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

**Give a reason for your answer.**

**(1 mark)**

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**(Total for Question 24 is 4 marks)**

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**Turn over**

**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)**

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**(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)**

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**(Total for Question 25 is 4 marks)**

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**Turn over**

**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 2 pages.**



**26. continued.**

**50**

**26. continued.**

**\_\_\_\_\_ %**

**(Total for Question 26 is 5 marks)**

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**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)**

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**Turn over**

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

(3 marks)

Answer space continues on the next page.

**28. continued.**

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**(Total for Question 28 is 3 marks)**

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**TOTAL FOR PAPER IS 80 MARKS**  
**END OF PAPER**

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