Mental Arithmetic
Entry Tests Guide

Schofield&Sims

How to use the Entry Tests

Mental Arithmetic makes it easy for teachers to provide work for different abilities within a class or group, using two Entry Tests to help you select the right book for each pupil or class. Pupils working significantly above or below age-related expectations can work on the book best suited to their needs. This means that all pupils will be working at their own pace, giving you the time to support those who need your help, including those with additional needs or disabilities.

Two **Mental Arithmetic** Entry Tests are available in this guide:

- Entry Test A is suitable for lower Key Stage 2 and covers **Mental Arithmetic 1** to **3**
- Entry Test B is suitable for upper Key Stage 2 and covers **Mental Arithmetic 4** to **6**.

Both Entry Tests are designed to help you establish the starting point for each pupil. You may wish to test all the class or, if you are already using the series, only those whose competency in mathematics you are unsure of.

Administering the Entry Tests

Before administering the Entry Tests, ensure that you have a sharp pencil, a photocopy of the appropriate test and some spare paper for each pupil. Entry Tests can also be downloaded from our website: **www.schofieldandsims.co.uk/free-downloads**

Explain to the pupil or the class the following points:

- the purpose of the test is to make sure that the maths work they do on a daily basis is at a suitable level – not too easy or too difficult for them
- only the individual and the teacher will know the results of the test
- the test is not timed but is likely to take up to an hour
- the questions are arranged to become increasingly difficult as they work through the test
- there will come a point when they are unable to answer any more questions – and at this point they may read quietly so as not to disturb others who are still working
- they should try to do their best.

You may then distribute the Entry Test and tell pupils to start.

Marking the Entry Tests

Use the Entry Test marking keys on page 8 to mark the test. One mark is given for each correct answer. Where a question has two parts, give half a mark for each part.

The table below indicates which Mental Arithmetic book will be most suitable for each child, based on their Entry Test score.

Entry Test	Entry Test score	Next step
Entry Test A	0–8	Begin with the Mental Arithmetic Introductory Book.
	9–13	Begin with Mental Arithmetic 1.
	14–18	Would benefit from working on Mental Arithmetic 1 for consolidation but, if confident, could start Mental Arithmetic 2.
	19–28	Begin with Mental Arithmetic 2.
	29–33	Would benefit from working on Mental Arithmetic 2 for consolidation but, if confident, could start Mental Arithmetic 3.
	34–40	Begin with Mental Arithmetic 3.
	41–45	Would benefit from working on Mental Arithmetic 3 for consolidation but, if confident, could start Mental Arithmetic 4.
	46–50	Begin with Mental Arithmetic 4.
Entry Test B	0–15	Take Entry Test A for more information or begin with Mental Arithmetic 3.
	16–20	Begin with Mental Arithmetic 4.
	21–25	Would benefit from working on Mental Arithmetic 4 for consolidation but, if confident, could start Mental Arithmetic 5.
	26–29	Begin with Mental Arithmetic 5.
	30–33	Would benefit from working on Mental Arithmetic 5 for consolidation but, if confident, could start Mental Arithmetic 6.
	34–40	Begin with Mental Arithmetic 6.
	41–50	Achieving well but, for consolidation, work on Mental Arithmetic 6.

Entry Test A

Name:

Class/Set: Date:

Answer

1 Increase 6 by 5. _____

2 Name the month which is three months after December. _____

3 20p + 30p = _____ p

4 Write this number in figures.

4 tens 7 units _____

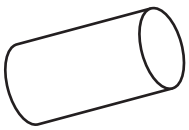
5 63 – 7 = _____

6 4 + 4 + 4 + 4 + 4 + 4 = ___ × ___ = ___

7 A square has ___ equal sides and ___ right angles. _____

8 Add 30cm to 40cm. _____ cm

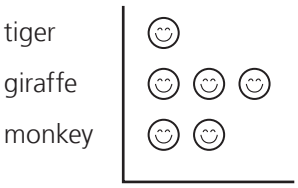
9 Write the number that is 5 more than 14 minus 9. _____

10 

Two faces on a cylinder are the same. What shape are they? _____

11 How much longer is 1m than 57cm? _____ cm

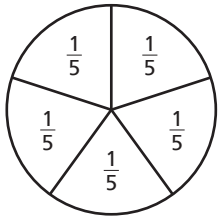
12 How many children chose giraffe as their favourite animal? _____



Two children = ☺

13 Write the two missing numbers in this sequence.

0, 8, 16, ___, 32, ___, 48 _____

14 

The circle is one whole one. How many fifths in four whole ones? _____

Answer

15 400 + 70 + 5 = _____

16 26 + 78 = _____

17 What number is added to 306 to make 376? _____

18 £3.00 – £1.80 £ _____

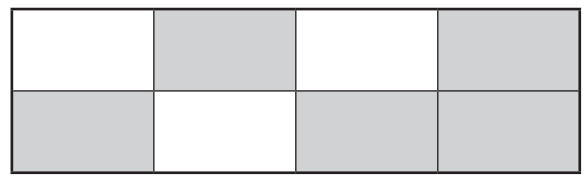
19 How many times smaller is 54 than 540? _____

20 28 March is the first day of a holiday which ends on 6 April. How many days? _____

21 What fraction of the whole strip is

a shaded a _____

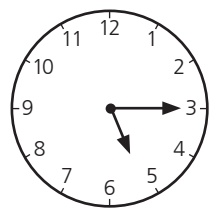
b unshaded? b _____



22

Scores	
Jay	Emily
22	18
7	13
9	9

How many more did Emily score than Jay? _____

23 

How many minutes from the time on the clock to ten to six? _____ min

24 $\frac{3}{10} + \frac{6}{10}$ = _____

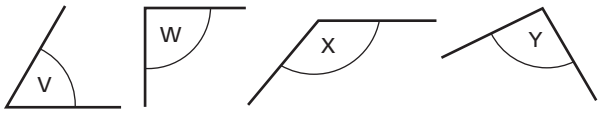
25 What is the missing number?

___ × 6 = 8 × 3 _____

26 1kg costs 45p. 200g costs ___ p. _____ p

Answer

27 Which of these angles is an acute angle?



28 Write 4km 600m to the nearest kilometre. _____ km

29 Add $\frac{1}{4}$ of 20 to $\frac{1}{8}$ of 48. _____

30 Nine pieces of wire each measure 6cm. Find the total length of the pieces in millimetres. _____ mm

31 Divide 1m by 5. Answer in centimetres _____ cm

32 Add three hundred to one thousand and ten. Answer in digits. _____

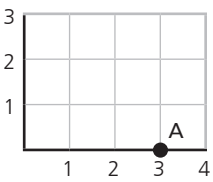
33 Write these decimals in ascending order.

5.79	5.31	4.87	4.09	5.33

_____

34 Write as £s the value of fifty-nine 5ps. £ _____

35 The perimeter of a square is 60mm. Find the length of one side. _____ mm

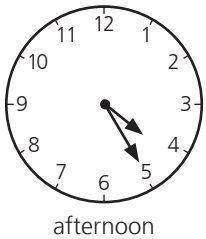
36 

Write the coordinates of A. (_____, _____)

37 How many times larger than 35 is

a three hundred and fifty a _____

b three thousand five hundred? b _____

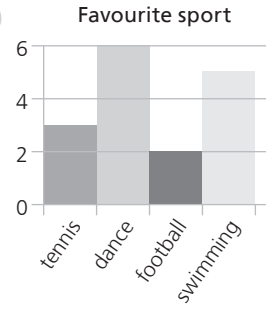
38 

afternoon

This clock is half an hour fast. Write the correct time in digits using a.m. or p.m. _____

39 $\frac{17}{10} - \frac{8}{10}$ = _____

Answer

40 

How many votes are shown on this bar chart altogether? _____

41 What is the missing number?

9 × 8 = ☐ × 12 _____

42 

Each side of this octagon is 0.6cm long. What is the length of its perimeter in millimetres? _____ mm

43

Toffee apples 51p each or 4 for £1.96

How much is saved on each toffee apple by buying four at a time? _____ p

44 Write, in 24-hour clock format, the correct time for each digital clock if

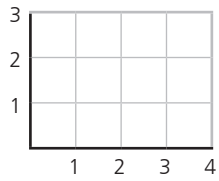
a clock X is 16min fast a _____

b clock Y is 35min slow. b _____

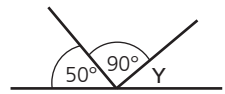
X Y

45 Find the difference in grams between 1.7kg and 2.3kg. _____ g

46 6.71 = $\frac{\square}{100}$ _____

47 

A square has vertices at (4, 0) (2, 0) (2, 2) and (x, y). What are the values of x and y? (_____, _____)

48 

Find the size of angle Y in degrees. _____ °

49 Find $\frac{1}{2}$ of $5\frac{1}{2}$. _____

50 $6\overline{)£4.08}$ £ _____

Entry Test B

Name:

Class/Set: Date:

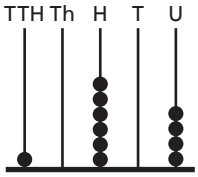
Answer

1 200 – 96 =

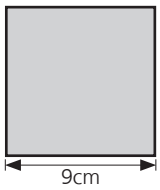
2 Increase 250 by $\frac{1}{3}$ of 90.

3 £50.00 – five 5ps = £

4 5.07 × 100 =

5 

Write the number shown on the abacus in words.

6 

Find

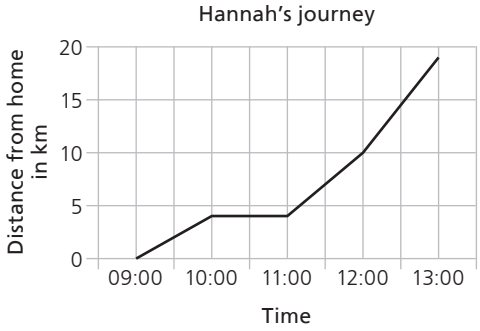
a the perimeter of this square a cm

b its area. b cm²

7 474 563 + 403 003 =

8 Which year is represented by the Roman numerals MCMLXXXVII?

9 Hannah left home at 09:00.
She stopped for coffee at a café.
How far from home was the café? km



10 A jug when $\frac{3}{4}$ full holds 600ml.
How many millilitres does it hold when it is $\frac{1}{8}$ full? ml

11 Find the two missing numbers in the sequence.
80, 8, ☐, 0.08, ☐

Answer

12 How many hours and minutes from time X to time Y? h min

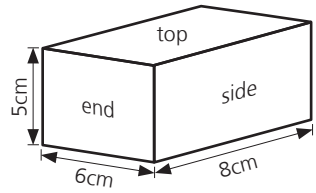
13 5l ÷ 4 = ☐ ml ml

14 The measurements of the box are given. Find the area of

a both the sides a cm²

b both the ends b cm²

c the top and bottom. c cm²



15 How many degrees in one-eighth of a full turn? °

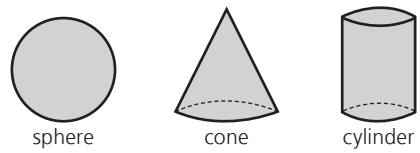
16 Increase £8.50 by 10%. £

17 Which of these are equivalent to 80%?

$\frac{8}{10}$	0.75	0.08	$\frac{1}{8}$	$\frac{4}{5}$	0.8

18 0.07 × 8 =

19 Which of these shapes will have a circular face when cut horizontally and a triangular face when cut vertically?



20 Change this improper fraction to a mixed number. $\frac{27}{8}$

21 What percentage of 24p is 6p? %

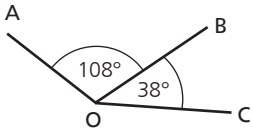
22 102 – 87 =

Answer

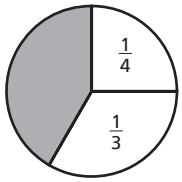
23 $16 - 6 \times 2 + 8 \div 2 =$ _____

24 $\frac{£14.63}{7} =$ £ _____

25 Calculate the reflex angle AOC. _____ °



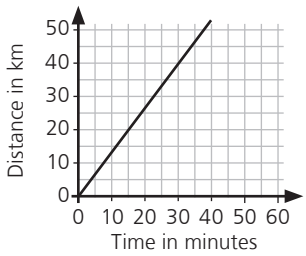
26 Harry missed the 08:48 train by 10min. How long did he have to wait for the next train at 10:25? _____ h _____ min

27 

What fraction of the circle is shaded? _____

28 $\frac{3}{10} \times \frac{1}{2} =$ _____

29 The graph shows the speed of a car. Use the graph to find the time taken by the car to travel 20km. _____ min



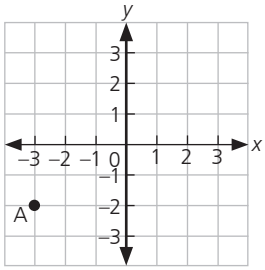
30 Change 5.2m to millimetres. _____ mm

31 $252 \div 28 =$ _____

32 The diameter of a circle is 4cm. Its circumference is 3.14 times this length. What is the perimeter of the semicircle? _____ cm

33 Divide £135 in the ratio of 5:4. _____

34 Point A is at (–3, –2). Write the coordinates of its reflection in the *y*-axis. (_____ , _____)



35 A coat costing £45 is reduced by 20%. How much do I pay? £ _____

Answer

36 What is the length in millimetres when an 11.5cm line is enlarged by a scale factor of 6? _____ mm

37 How many thousandths in $\frac{1}{2}$ of 0.01? _____

38 $\frac{6}{7} \div 4 =$ _____

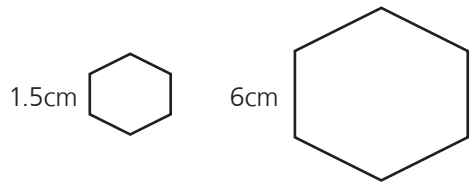
39 $1\frac{3}{8} + \frac{2}{5} =$ _____

40 Find the circumference of a wheel of radius 3cm.

$\pi = 3.14$

_____ cm

41 These two hexagons are similar. What is the scale factor of enlargement? _____



42 What is half of 3.75? _____

43 Arrange in descending order.

$\frac{3}{4}$ $\frac{4}{5}$ $\frac{2}{3}$ $\frac{1}{2}$ $\frac{5}{8}$ _____ > _____ > _____ > _____

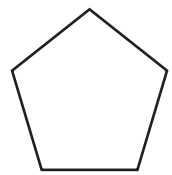
44

London
45
39
44
36
43

This table shows the number of millimetres of rain each week for 5 weeks. What is the mean rainfall to the nearest millimetre? _____ mm

45 Express 70 as the product of three prime numbers. _____

46 If m = 7, n = 5, evaluate $(m + n) \times (m - n)$. _____

47 
What is the order of rotational symmetry of a regular pentagon about its centre? _____

48 A train goes at 78kph for 20min. How far does it travel? _____ km

49 True or false? $7 < \sqrt{80} < 8$ _____

50 Write 24×25 as a number. _____

Entry Test A marking key

1. 11
2. March
3. 50p
4. 47
5. 56
6. 4 × 6 (or 6 × 4) 24
7. 4 4
8. 70cm
9. 10
10. circle
11. 43cm
12. 6
13. 24 40
14. 20
15. 475
16. 104
17. 70
18. £1.20
19. 10
20. 10
21. **a** $\frac{5}{8}$ **b** $\frac{3}{8}$
22. 2
23. 35min
24. $\frac{9}{10}$
25. 4
26. 9p
27. V
28. 5km
29. 11
30. 540mm
31. 20cm
32. 1310
33. 4.09 4.87 5.31 5.33 5.79
34. £2.95
35. 15mm
36. (3, 0)
37. **a** 10 **b** 100
38. 3.55 p.m.
39. $\frac{9}{10}$
40. 16
41. 6
42. 48mm
43. 2p
44. **a** 09:59 **b** 00:25
45. 600g
46. $\frac{671}{100}$
47. (4, 2)
48. 40°
49. $2\frac{3}{4}$
50. £0.68

Entry Test B marking key

1. 104
2. 280
3. £49.75
4. 507
5. ten thousand six hundred and four
6. **a** 36cm **b** 81cm^2
7. 877 566
8. 1987
9. 4km
10. 100ml
11. 0.8 0.008
12. 13h 35min
13. 1250ml
14. **a** 80cm^2
    b 60cm^2
    c 96cm^2
15. 45°
16. £9.35
17. $\frac{8}{10}$ $\frac{4}{5}$ 0.8
18. 0.56
19. cone
20. $3\frac{3}{8}$
21. 25%
22. 15
23. 8
24. £2.09
25. 214°
26. 1h 27min
27. $\frac{5}{12}$
28. $\frac{3}{20}$
29. 15min
30. 5200mm
31. 9
32. 10.28cm
33. 75:60
34. (3, –2)
35. £36
36. 690mm
37. 5
38. $\frac{3}{14}$
39. $1\frac{31}{40}$
40. 18.84cm
41. 4
42. 1.875
43. $\frac{4}{5} > \frac{3}{4} > \frac{2}{3} > \frac{5}{8} > \frac{1}{2}$
44. 41mm
45. 2 × 5 × 7
46. 24
47. 5
48. 26km
49. false
50. 600

Overview

Mental Arithmetic is a unique resource providing varied and frequent practice of core mathematical processes and concepts.

A trusted favourite for homework and classroom use, each book contains over 1,500 carefully structured questions, combining numerical calculations, written problems, and one- and two-step challenges to strengthen core skills.

Four steps to using Mental Arithmetic

Mental Arithmetic offers a structured and effective approach to developing confidence and fluency. The series is organised by ability rather than age, so we recommend pupils use the free *Entry Tests* to decide on the most suitable starting point before beginning regular practice.

1. **Initial assessment** – Assess what level pupils are working at using the *Entry Tests* or *National Curriculum Charts* that are available in this guide or as a free digital download on the **Schofield & Sims** website.

2. **Rigorous, daily maths practice** – Schedule 10–20 minutes a day for pupils to work through part of a **Mental Arithmetic** book test. Many schools find that the easiest time to fit in **Mental Arithmetic** sessions is either at the beginning of the day, as an early morning starter, or as homework.

3. **Effective marking and feedback** – Organise weekly group marking sessions to quickly and easily identify areas of difficulty and provide immediate feedback. Where further diagnostic assessment is required, use the *Diagnostic Checks* provided in the **Teacher's Guides** to assess the exact nature of a pupil's difficulties.

4. **A positive maths culture** – Encourage children to take pride in the development of their maths skills and monitor their own progress using the *Progress Tests* and *Achievement Charts* in each pupil book. Reward those whose achievements are especially significant with editable certificates available from the Schofield & Sims website.

More ways to use Mental Arithmetic

Mental Arithmetic may be used in many different ways, including:

- individual work, with pupils who are confident with the maths concepts covered
- maths recovery, to assess new or struggling pupils and to improve mental fluency
- paired work, allowing pupils who lack confidence in some concepts to discuss the questions and think of possible ways to answer them
- group or whole-class work, working through a set of questions with a group of pupils after they have answered them
- homework, with parents and carers encouraging children to explain their working methods.

Mental Arithmetic and the National Curriculum

By providing rich and varied maths practice and on-going formative assessment, **Mental Arithmetic** meets the requirements of the National Curriculum, enabling pupils to consolidate their essential maths skills and develop a deeper understanding of the topics covered. The range of topics per test encourages pupils to think mathematically and apply all that they have learnt when answering each question, as well as helping them to improve their mental fluency.

The table below indicates which Mental Arithmetic book may be most suitable for your class, based on end of year expectations in the National Curriculum. First Mental Arithmetic is available for younger children.

	Pupils at risk of not meeting end of year expectations	Pupils on target to meet end of year expectations	Pupils on target to exceed end of year expectations
Year 3	Mental Arithmetic Introductory Book	Mental Arithmetic 1	Mental Arithmetic 2
Year 4	Mental Arithmetic 1	Mental Arithmetic 2	Mental Arithmetic 3
Year 5	Mental Arithmetic 3	Mental Arithmetic 4	Mental Arithmetic 5
Year 6	Mental Arithmetic 4	Mental Arithmetic 5	Mental Arithmetic 6

Pupils should demonstrate mastery of the curriculum content for their year group before they are allowed to move on to a later book in the series. The increase in difficulty within each book will challenge and extend more able pupils, providing comprehensive practice and highlighting any gaps in their understanding.

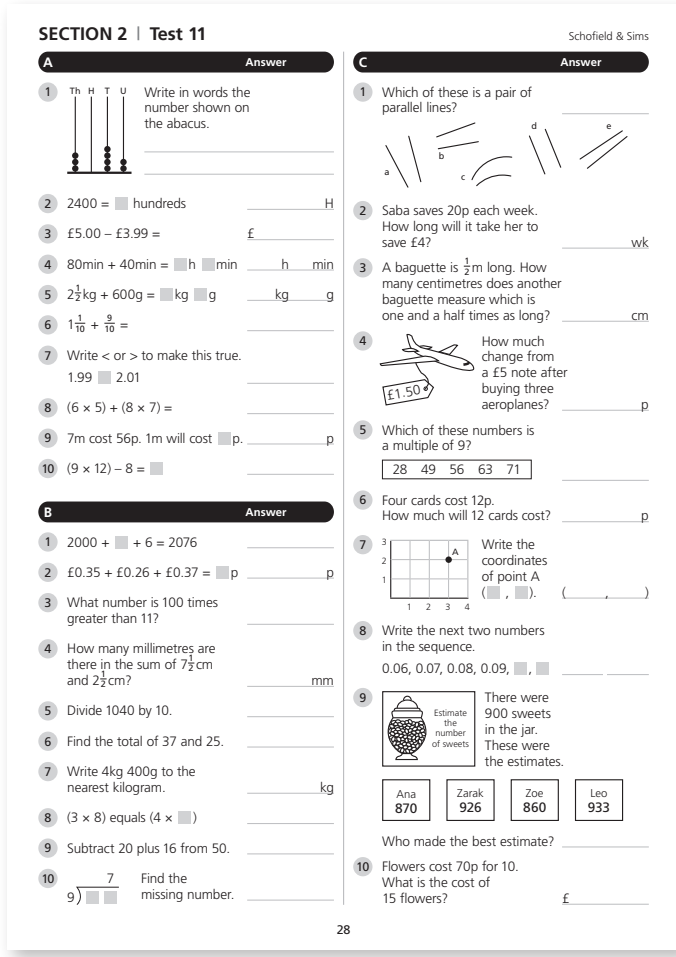
Individual test structure

Each pupil book test is in three parts, A, B and C.

Part A: contains questions where the use of language is kept to a minimum, and symbols and numbers are used.

Part B: contains questions where mathematical language is used.

Part C: contains written questions that involve one- or two-step problem solving.



SECTION 2 | Test 11

Schofield & Sims

A Answer

1. Th H T U — Write in words the number shown on the abacus. _____
2. 2400 = ☐ hundreds _____ H
3. £5.00 – £3.99 = £ _____
4. 80min + 40min = ☐ h ☐ min _____ h ☐ min
5. $2\frac{1}{2}$kg + 600g = ☐ kg ☐ g _____ kg ☐ g
6. $1\frac{1}{10} + \frac{9}{10}$ = _____
7. Write < or > to make this true. 1.99 ☐ 2.01 _____
8. (6 × 5) + (8 × 7) = _____
9. 7m cost 56p. 1m will cost ☐p. _____ p
10. (9 × 12) – 8 = ☐ _____

B Answer

1. 2000 + ☐ + 6 = 2076 _____
2. £0.35 + £0.26 + £0.37 = ☐p _____ p
3. What number is 100 times greater than 11? _____
4. How many millimetres are there in the sum of $7\frac{1}{2}$cm and $2\frac{1}{2}$cm? _____ mm
5. Divide 1040 by 10. _____
6. Find the total of 37 and 25. _____
7. Write 4kg 400g to the nearest kilogram. _____ kg
8. (3 × 8) equals (4 × ☐) _____
9. Subtract 20 plus 16 from 50. _____
10. 9)7 ☐☐ — Find the missing number. _____

C Answer

1. Which of these is a pair of parallel lines? _____
2. Saba saves 20p each week. How long will it take her to save £4? _____ wk
3. A baguette is $\frac{1}{2}$m long. How many centimetres does another baguette measure which is one and a half times as long? _____ cm
4. £1.50 — How much change from a £5 note after buying three aeroplanes? _____ p
5. Which of these numbers is a multiple of 9? 28 49 56 63 71 _____
6. Four cards cost 12p. How much will 12 cards cost? _____ p
7. Write the coordinates of point A (☐, ☐). (____, ____)
8. Write the next two numbers in the sequence. 0.06, 0.07, 0.08, 0.09, ☐, ☐ _____ _____
9. Estimate the number of sweets — There were 900 sweets in the jar. These were the estimates.

Ana	Zarak	Zoe	Leo
870	926	860	933

Who made the best estimate? _____

10. Flowers cost 70p for 10. What is the cost of 15 flowers? £ _____

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