GL South West Hertfordshire
Mock 3 Mathematics

Paper A

Mathematics

50 minutes
60 marks

- This is a multiple-choice paper. Mark your answer to each question on the separate answer sheet. You should mark only one answer for each question.
- If you are not sure of an answer, choose the one you think is best. If you cannot do a question, leave it and move onto the next.
- Work as quickly and carefully as you can.

Please turn over the page to begin the practice section for the Mathematics Test.

Maths Practice Section

(Untimed)

This practice section gives an example of the sort of questions you will be faced with in this test, with the correct answer filled in on the answer sheet so that you can see how to do it.

There are also some practice questions that don't have the answers filled in, so that you can practise working them out for yourself and filling in the answer sheet.

Work out the correct answer and mark its letter on the answer sheet.

A **Example**

I think of a number.
I triple my number and then I subtract 9.
The final result is 30.

A. 39 B. 8 C. 13 D. 16 E. 21

The answer is **13**. You can work this out by working backwards and applying inverse operations. Start with 30 and add 9. This is equal to 39. We now need to divide this number by 3, which makes 13.

The correct answer has been marked on your answer sheet.

Now try these practice questions.
Work out the correct answer and mark it on the answer sheet.

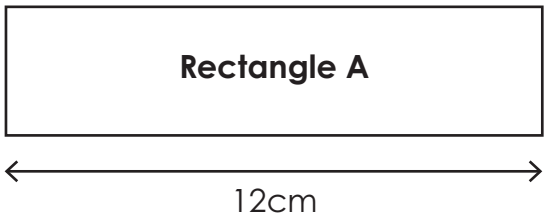
1 **Practice**

Which of these numbers is NOT a square number?

A. 16 B. 25 C. 1 D. 49 E. 65

2 **Practice**

The perimeter of Rectangle A is 32cm. What is the width of the rectangle?



A. 6cm B. 7cm C. 8cm D. 4cm E. 3cm

END OF PRACTICE SECTION

The Mathematics Test begins on the next page.

- **You have 50 minutes to complete the Mathematics Test.**
- **There are 60 questions to answer.**
- **Your time will start when you turn over the page.**
- **Do not turn over the page until you are told to do so.**

Maths

(50 minutes)

Work out the correct answer and mark its letter on your answer sheet.

1 What is the value of 7 in the number 3,472,819?

A 700 **B** 7,000 **C** 70,000 **D** 700,00 **E** 7,000,000

2 A right-angled triangle has a base of 9cm and a height of 14cm.
What is its area?

A 63cm² **B** 126cm² **C** 46cm² **D** 23cm² **E** 57cm²

3 Which option represents the most stickers?

A 3 sheets of 24 stickers each.

B 2 sheets of 18 stickers and 4 sheets of 12 stickers each.

C 4 sheets of 25 stickers and 1 sheet of 16 stickers.

D 6 sheets of 20 stickers each.

E 5 sheets of 23 stickers each.

4 Calculate: 4⅔ – 2¾

A 1 ¹¹⁄₁₂ **B** 2 ½ **C** 1 ⅚ **D** 2 ⁵⁄₁₂ **E** 1 ⁷⁄₁₂

5 Look at the sequence below.

84, 77, 70, …

Which term of the sequence will be equal to 0?

A 11th **B** 12th **C** 13th **D** 14th **E** 15th

6 The length of a rope is 17.83m.
The rope is wound three times around a cylindrical post of circumference 43cm.
What length of rope is left unused?

A 16.40m **B** 17.40m **C** 16.68m **D** 15.25m **E** 16.54m

7 A car uses 8.4 litres of fuel per 100km. How much fuel will it use on a 350km journey?

A 26.6 litres **B** 32.4 litres **C** 25.2 litres **D** 29.4 litres **E** 30 litres

8 Anya thinks of a multiple of 17. If she subtracts 9, it becomes a multiple of 12.

What number did Anya think of?

A 85 **B** 119 **C** 170 **D** 136 **E** 153

9 Order these from smallest to largest:

0.6, ⅗, ¾, 0.58, 7/10

A 0.58, ⅗, 0.6, 7/10, ¾

B ¾, 0.58, ⅗, 0.6, 7/10

C 0.58, 0.6, 7/10, ⅗, ¾

D ⅗, 0.58, 7/10, 0.6, ¾

E 0.6, 0.58, ⅗, , ¾, 7/10

10 **Use the timetable below to answer questions 10 and 11.**

If train 1 is delayed by 23 minutes at Ashford and by a further 8 minutes' delay at Maidstone, what time will it arrive at Tonbridge?

Explore Rail – Morning Services			
	Train 1	**Train 2**	**Train 3**
Ashford	06:12	07:45	08:30
Maidstone	07:04	08:37	09:22
Tonbridge	07:51	09:24	10:09
London Bridge	09:03	10:36	11:21

A 08:09 **B** 08:14 **C** 08:19 **D** 08:22 **E** 08:25

11 Priya wants to arrive in London Bridge no later than 11:00. She is at Maidstone. Which is the latest train she can catch?

A Train 1 **B** Train 2 **C** Train 3 **D** Any train **E** Train 1 and Train 2

12 A rectangular fish tank measures 60cm × 35cm × 40cm.
It is filled to ¾ of its capacity with water.
How many litres of water does it contain? (1 litre = 1000cm³)

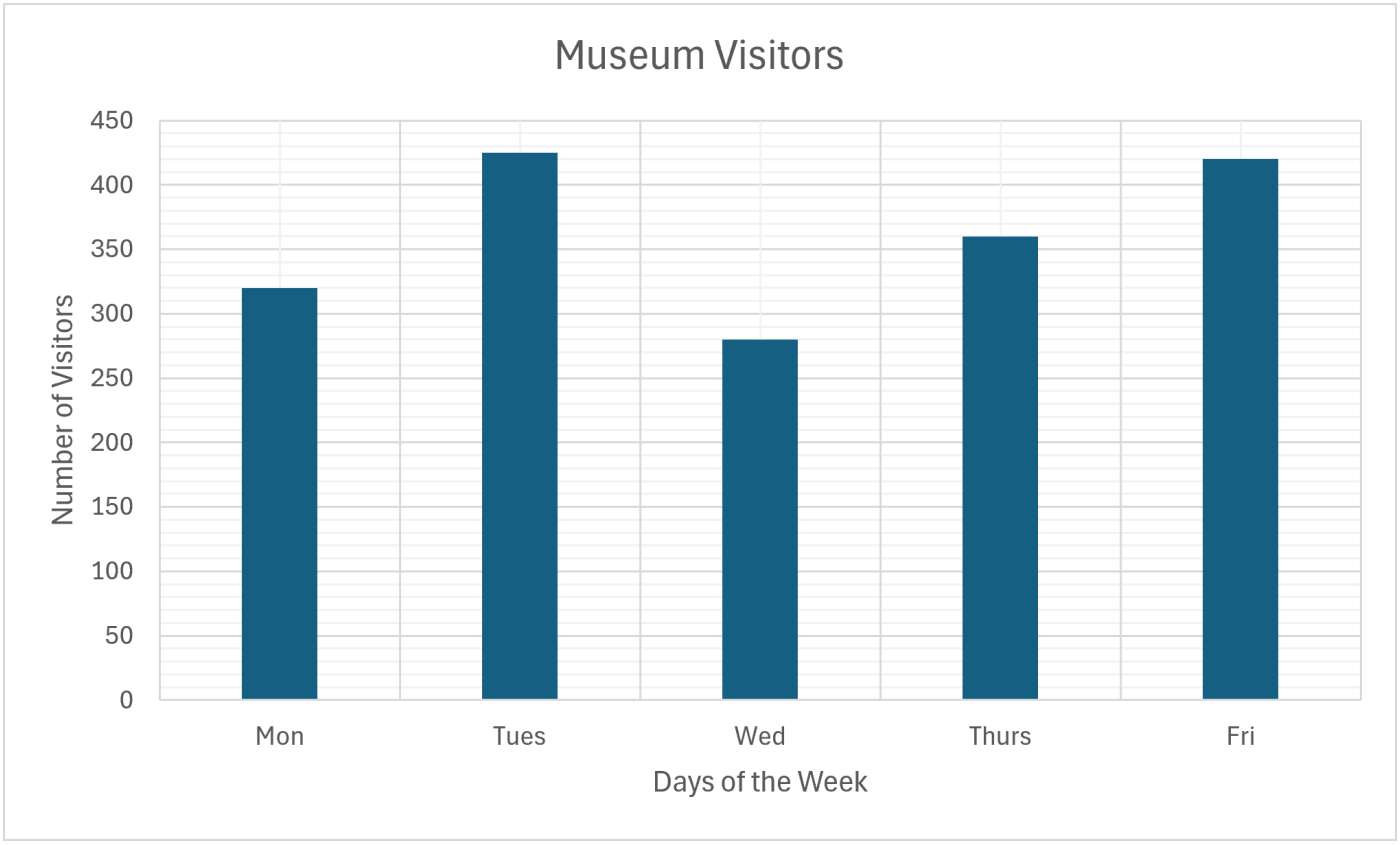
A 63 litres **B** 84 litres **C** 72 litres **D** 56 litres **E** 48 litres

13 The thermometer shows −4°C. By midday the temperature has risen by 11°C.
By midnight it falls by 9°C. What is the midnight temperature?

A −6°c **B** −2°c **C** 6°c **D** 2°c **E** 4°c

The graph below shows the number of visitors to a museum over five days.

Use the graph to answer questions 14–16.



14 How many more visitors went to the museum on Friday than on Wednesday?

A 190 **B** 210 **C** 160 **D** 220 **E** 140

15 What is the mean number of daily visitors?

A 375 **B** 383 **C** 361 **D** 363 **E** 353

16 What is the range of the number of daily visitors?

A 195 **B** 214 **C** 120 **D** 145 **E** 136

17 Calculate: 15.6 × 8.5

A 130.6 **B** 132.6 **C** 133.2 **D** 134.6 **E** 131.2

18 Find 12% of £345.

A £39.40 **B** £41.40 **C** £43.80 **D** £40.60 **E** £38.90

19 A cinema has 24 rows. The first 8 rows each have 15 seats. The remaining rows each have 18 seats. How many seats are there in total?

A 408 **B** 420 **C** 288 **D** 312 **E** 432

20 What is the value of k in: $5k^2 = 125$?

A 3 **B** 4 **C** 5 **D** 6 **E** 25

21 A shop reduces a jacket priced at £85 by 35%. A week later the reduced price is increased by 20%. What is the final price?

A £62.40 **B** £55.25 **C** £66.30 **D** £63.75 **E** £68.00

22 $5^2 + 2^3 + 3 = x^2$

What is the value of x?

A 5 **B** 6 **C** 7 **D** 8 **E** 9

23 Three friends buy lunch. Kim spends £2 more than Lena. Tom spends twice as much as Lena. Together they spend £22. How much does Kim spend?

A £5 **B** £6 **C** £7 **D** £8 **E** £9

24 Three water bottles have different capacities. Each bottle is a different price.

Bottle X **Bottle Y** **Bottle Z**

Which bottle has the lowest capacity per pound (£)?

A Bottle X **B** Bottle Y **C** Bottle Z **D** Both X and Z **E** Both Y and Z

25 A computer program carries out the following steps:

If (old) number < 150, then (new) number = (old) number × 2
Print (new) number (on the screen)
Repeat the calculation steps

When the program repeats, the (new) number becomes the (old) number for the next cycle.

If Priya inputs the (old) number 17, what is the 3rd number she will see on the screen?

A 34 **B** 119 **C** 272 **D** 68 **E** 136

26 A square has a perimeter of 52cm. What is its area?

A 136cm² **B** 144cm² **C** 156cm² **D** 169cm² **E** 196cm²

27 A recipe for 6 people requires 450g of flour and 3 eggs. How much flour is needed for 10 people?

A 650g **B** 700g **C** 720g **D** 750g **E** 775g

28 The angles in a quadrilateral are in the ratio 2:3:4:6. What is the size of the largest angle?

A 96° **B** 108° **C** 144° **D** 120° **E** 180°

29 What is the value of q in: $(3q + 7) \div 4 = 10$

A 9 **B** 10 **C** 11 **D** 12 **E** 13

30 A school library survey found the following numbers of books borrowed per pupil in one month: 4, 7, 3, 9, 5, 3, 6, 3. What is the modal number of books borrowed?

A 3 **B** 4 **C** 5 **D** 6 **E** 7

31 A solid cuboid has dimensions 8cm × 5cm × 3cm. What is the total surface area of the cuboid?

A 158cm² **B** 120cm² **C** 79cm² **D** 190cm² **E** 149cm²

32 A coach journey covers 252 km at an average speed of 63 km/h. If the coach leaves at 09:35, what time does it arrive?

A 14:00 **B** 13:25 **C** 13:40 **D** 13:45 **E** 13:35

33 What is the lowest common multiple (LCM) of 12 and 18?

A 36 **B** 6 **C** 72 **D** 24 **E** 216

34 A rectangular garden has an area of 120m². Its length is 15m. A path 1m wide is built all the way around the outside. What is the area of just the path?

A 60m² **B** 56m² **C** 72m² **D** 50m² **E** 48m²

35 Two-thirds of a number is 48. What is ¾ of the original number?

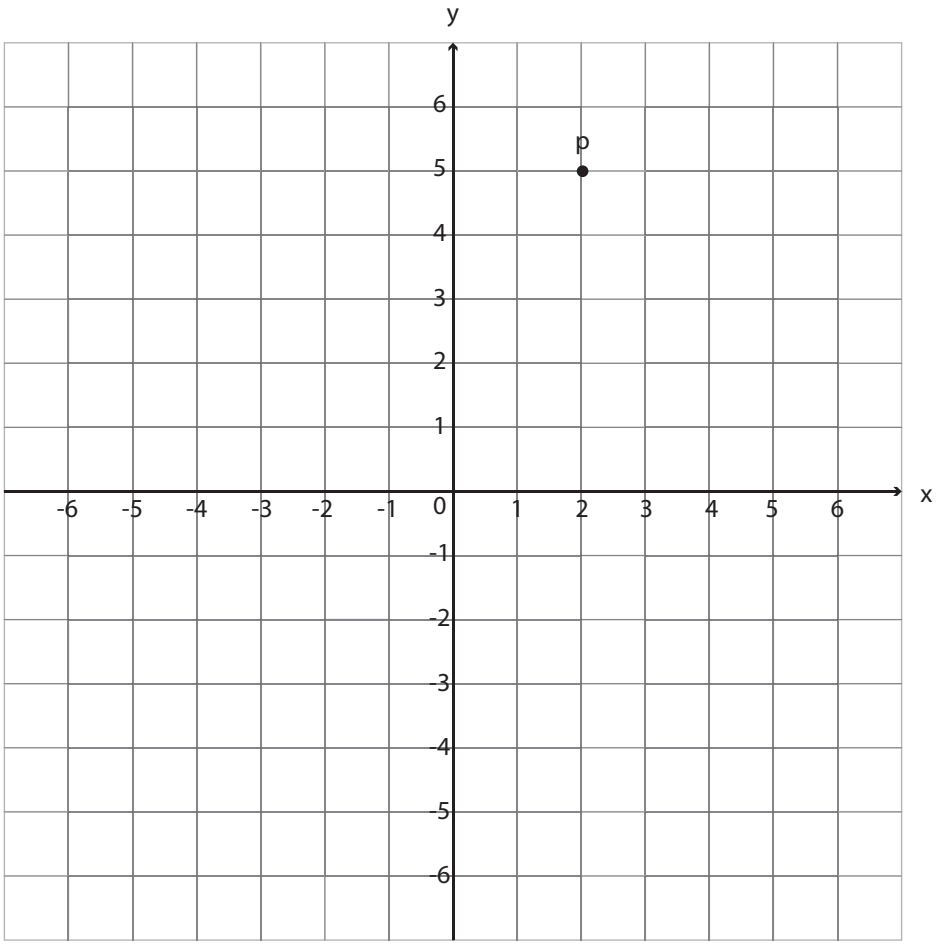
A 56 **B** 60 **C** 64 **D** 54 **E** 72

36 A lottery prize of £4,500 is shared between three people in the ratio 2:3:7. How much more does the person with the largest share receive than the person with the smallest share?

A £1,250 **B** £1,775 **C** £2,000 **D** £1,875 **E** £2,500

37 Point P is at coordinates (2,5). It is reflected in the y-axis.

What are the new coordinates?



A (-2, 5) **B** (2, -5) **C** (-2, -5) **D** (5, 2) **E** (-5, 2)

38 How many different ways can 4 students be arranged in a line of 4 seats?

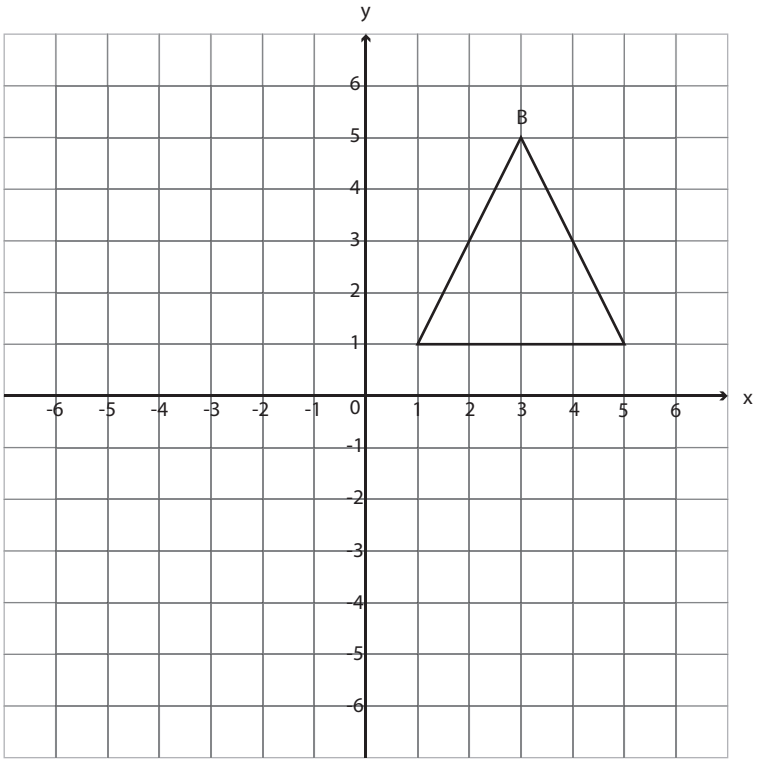
A 8 **B** 16 **C** 24 **D** 48 **E** 64

39 A jar contains red and yellow marbles only. The probability of picking a red marble at random is ⅜. There are 25 yellow marbles in the jar. How many marbles are in the jar altogether?

A 38 **B** 40 **C** 42 **D** 44 **E** 48

40 A triangle has vertices at (1,1), (5,1) and (3,5). It is translated 3 right and 2 down.

What are the new coordinates of the vertex B?



A (6, 3) **B** (4, 3) **C** (6, 7) **D** (0, 3) **E** (3, 6)

41 Three classes raise money for charity. Class A raises £4 more than Class B. Class C raises twice as much as Class B. Together all three classes raise £64.

How much does Class A raise?

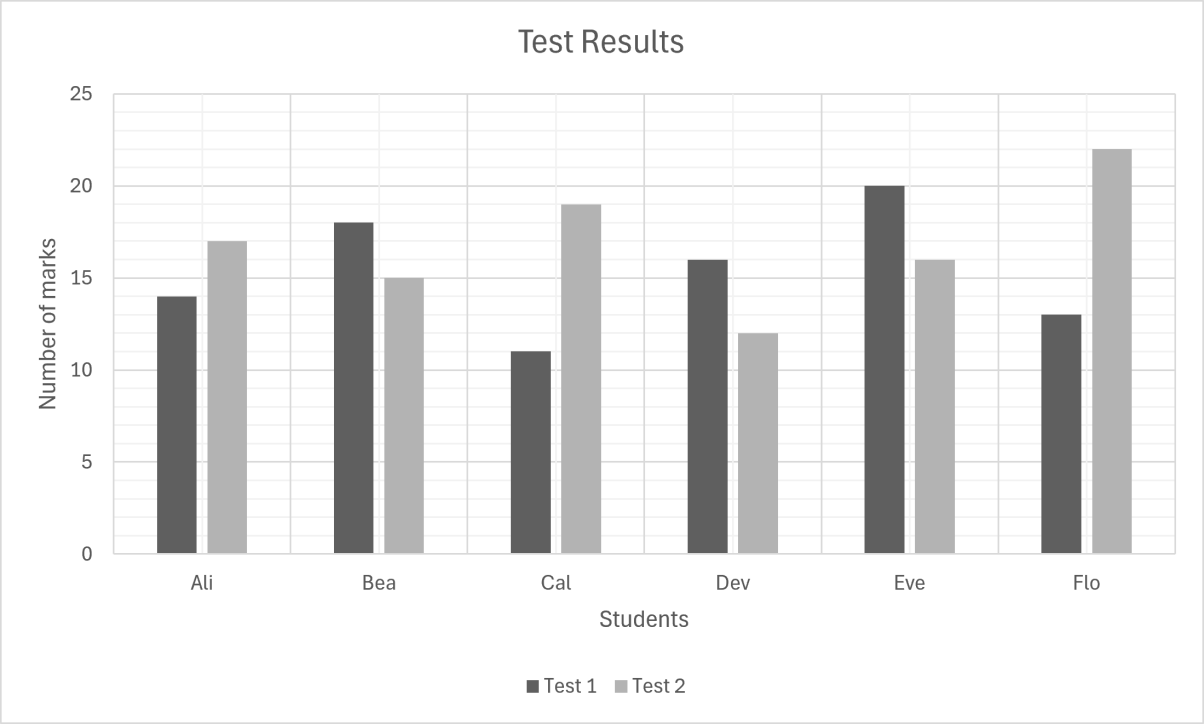
A £21 **B** £20 **C** £19 **D** £22 **E** £23

42 A number sequence follows the rule: multiply by 2 then subtract 3.

The third term is 11. What is the first term?

A 4 **B** 5 **C** 6 **D** 7 **E** 8

The graph below shows the scores of 6 students in two tests. Use the graph to answer questions 43-46.



43 What is the range of Test 1 marks?

A 11 **B** 9 **C** 15 **D** 16 **E** 7

44 Which student showed the greatest increase from Test 1 to Test 2?

A Ali **B** Bea **C** Cal **D** Dev **E** Flo

45 How many students received more marks in Test 1 than in Test 2?

A 2 **B** 3 **C** 4 **D** 5 **E** 6

46 How many more points did Cal score in Test 2 than in Test 1?

A 5 **B** 6 **C** 7 **D** 8 **E** 9

47 Which of the following is NOT a prime number?

A 41 **B** 43 **C** 47 **D** 51 **E** 53

48 A packet of seeds says that 2 out of every 5 seeds will not germinate.

Harriet plants 135 seeds. How many would she expect to germinate?

A 81 **B** 54 **C** 72 **D** 90 **E** 63

49 The product of two prime numbers is 77. What is their sum?

A 16 **B** 18 **C** 20 **D** 22 **E** 24

50 In a school of 240 pupils, 35% play a musical instrument.

Of these, $\frac{2}{7}$ play the violin.

How many pupils play the violin?

A 18 **B** 16 **C** 24 **D** 20 **E** 12

72 children were asked to vote for their favourite sport. The pie chart below shows the results. Use the pie chart to answer questions 51-53.

51 How many children voted for swimming?

A 15 **B** 16 **C** 17 **D** 18 **E** 19

52 What fraction of children chose tennis as their favourite sport?

A $\frac{1}{3}$ **B** $\frac{1}{4}$ **C** $\frac{1}{6}$ **D** $\frac{2}{3}$ **E** $\frac{1}{8}$

53 Swimming and cycling received the same number of votes. 12 children voted tennis their favourite sport. How many more children chose football than cycling?

A 6 **B** 7 **C** 8 **D** 9 **E** 10

54 What is $^{375}/_{1000}$ rewritten as a decimal number?

A 375.0 **B** 3.75 **C** 0.375 **D** 0.0375 **E** 37.5

55 $\frac{27}{45} = \frac{\square}{15}$

What number must go in the box to make the fractions equivalent?

A 3 **B** 5 **C** 7 **D** 9 **E** 12

56 A train travels at a constant speed of 80 km/h. It leaves the station at 9:15am and arrives at its destination at 10:45am.

How far did the train travel?

A 100km **B** 112km **C** 120km **D** 118km **E** 110km

57 If $^{4}/_{7}$ of a number is equal to 20, what is half the number?

A 14 **B** 17.5 **C** 20 **D** 22.5 **E** 35

58 The nth term of a sequence is given by: $4n - 3$.

Which term in the sequence has the value 57?

A 12th **B** 13th **C** 14th **D** 15th **E** 16th

59 A swimming pool charges £12 for each visit.

You can get 20% off the entry fee by buying a membership card.

Sofia pays £21.60 on her first visit, which is the total cost of the membership card and the reduced entry fee.

How many visits does Sofia need to make before she gets back the price of her membership card?

A 5 **B** 3 **C** 7 **D** 2 **E** 6

60 The table shows the number of books borrowed from five libraries in one month.

Library	**Books Borrowed**
Central	2,318,450
North	3,654,280
East	2,742,610
South	4,486,900
West	2,196,720

By rounding each number to the nearest million, what is the mean number of books borrowed per library?

A 1 million **B** 1.5 million **C** 2 million **D** 2.5 million **E** 3 million

End of Paper

1ELLPS11265