

# PiAcademy

## 11+ Mathematics GL Style - Pack 2 Test Paper - 5

### Instructions:

1. The time allowed is 50 minutes for 50 questions.
2. This is a multiple-choice test and each question carries 1 Mark.
3. Answers should be clearly marked in pencil on the provided answer sheet.
4. Do not turn over the booklet until you are told to do so.
5. No Marks are lost for an incorrect answer.
6. If you have marked the wrong answer, erase it and mark the new one. Make sure that your final answer is clear.

Symbols used:



Go to the next page.

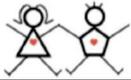


Do not turn the page until told to do so.

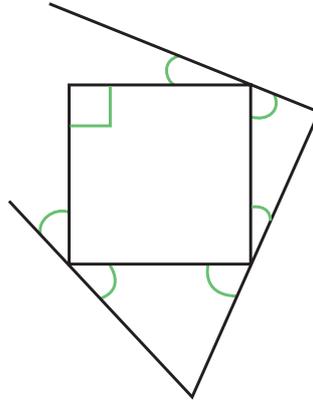


Stop working and await instructions.

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- 1 The diagram shows a square touching 3 straight lines. What is the sum of the 7 marked angles?



- (A)  $200^\circ$       (B)  $180^\circ$       (C)  $270^\circ$       (D)  $360^\circ$       (E)  $300^\circ$
- 

- 2 What is the remainder when the 1000 digit number 6666.....66 is divided by 8?

- (A) 0      (B) 3      (C) 2      (D) 1      (E) 4
- 

- 3 Arrange in order of size, from smallest to largest :  $\frac{4}{3}$ , 1.3,  $\frac{31}{10}$ ,  $\frac{6}{5}$ ,  $2\frac{9}{10}$

(A)  $1.3, \frac{4}{3}, 2\frac{9}{10}, \frac{31}{10}, \frac{6}{5}$       (B)  $2\frac{9}{10}, \frac{4}{3}, 1.3, \frac{31}{10}, \frac{6}{5}$

(C)  $\frac{6}{5}, 1.3, \frac{4}{3}, 2\frac{9}{10}, \frac{31}{10}$       (D)  $1.3, 2\frac{9}{10}, \frac{4}{3}, \frac{6}{5}, \frac{31}{10}$

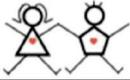
(E)  $\frac{4}{3}, 1.3, \frac{31}{10}, \frac{6}{5}, 2\frac{9}{10}$

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- 4 What is the 8th number in the sequence 5, 9, 15, 23, 33, ...?

- (A) 57      (B) 45      (C) 59      (D) 75      (E) 65





5 A pack contains  $2\frac{1}{4}$  kg of flour. I have used  $\frac{2}{3}$  kg of it. How many kg of flour are left?

- (A)  $1\frac{1}{2}$       (B)  $1\frac{1}{3}$       (C)  $1\frac{2}{3}$       (D)  $1\frac{1}{6}$       (E)  $1\frac{7}{12}$
- 

6 One mile is approximately 1.6km. How many metres are there approximately in 2.5 miles?

- (A) 3800      (B) 3200      (C) 3400      (D) 4000      (E) 4200
- 

7 The average of 5, 8, 9 and x is 8. What is x?

- (A) 3      (B) 10      (C) 2      (D) 5      (E) 8
- 

8 This number machine multiplies by 5 and then subtracts 3. What is the input?



- (A) 5      (B) 2      (C) 7      (D) 9      (E) 10
- 

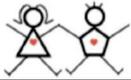
9 I flip a 6-sided die, with faces numbered 3, 4, 9, 11, 15, 18. What is the probability that I will get a prime number?

- (A)  $\frac{1}{3}$       (B)  $\frac{1}{2}$       (C)  $\frac{2}{3}$       (D)  $\frac{1}{6}$       (E)  $\frac{1}{4}$
- 

10 Adam has a rope of length 12 metres. He cuts it into n equal parts. He takes one part and cuts off 2 centimetres from it. What is the length of this remaining part in centimetres?

- (A)  $12n - 2$       (B)  $1200 - \frac{n}{2}$       (C)  $\frac{12}{n} - 2$       (D)  $\frac{n}{12} - 2$       (E)  $\frac{1200}{n} - 2$



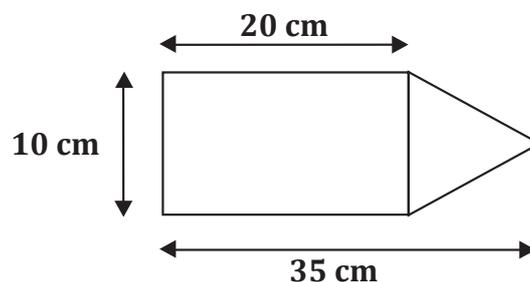


- 11 Write three hundred thousand and twenty nine as a number.
- (A) 300290      (B) 300209      (C) 300029      (D) 302900      (E) 329000
- 

- 12 I divide £75 in the ratio 2:3 and give the smaller part to Jack. Jack keeps 40% of what he got and gives the rest to Kate. How much does Kate get?
- (A) £12      (B) £30      (C) £18      (D) £20      (E) £8
- 

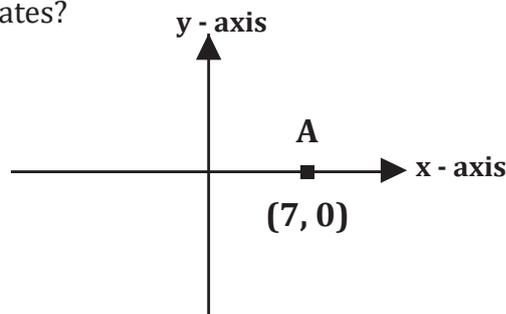
- 13 Twelve people have £5.55 each. They pool their money together and share it equally between two charities. How much does each charity get?
- (A) £32.50      (B) £37.50      (C) £33.30      (D) £31.55      (E) £35.50
- 

- 14 What is the area of the following figure?



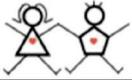
- (A)  $275 \text{ cm}^2$       (B)  $250 \text{ cm}^2$       (C)  $225 \text{ cm}^2$       (D)  $375 \text{ cm}^2$       (E)  $300 \text{ cm}^2$
- 

- 15 Point A at (7, 0) is moved 2 units to the left and then reflected across the y-axis. What are its new coordinates?



- (A) (-9, 0)      (B) (0, -5)      (C) (-5, 5)      (D) (-5, 0)      (E) (0, -9)





16 The scale of a map is 1:50 000. If the distance between two places on this map is 3.5 cm, what could be the actual distance between those two places?

- (A) 175m      (B) 1500m      (C) 3500m      (D) 1.75km      (E) 1.5km
- 

17 What is the smallest possible value of  $(10p + 15q + 5r + s)$  when p, q, r and s are different positive integers?

- (A) 59      (B) 42      (C) 54      (D) 38      (E) 49
- 

18 The ratio **0.666 : 3** is approximately equal to

- (A) 4:9      (B) 2:9      (C) 4:15      (D) 3:2      (E) 2:6
- 

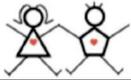
19 I jog a total of 12km at a rate of 5km per hour. How much time did I spend jogging?

- (A) 2 hours 25 mins      (B) 2 hours 15 mins      (C) 2 hours 10 mins  
(D) 2 hours 24 mins      (E) Two and a half hours
- 

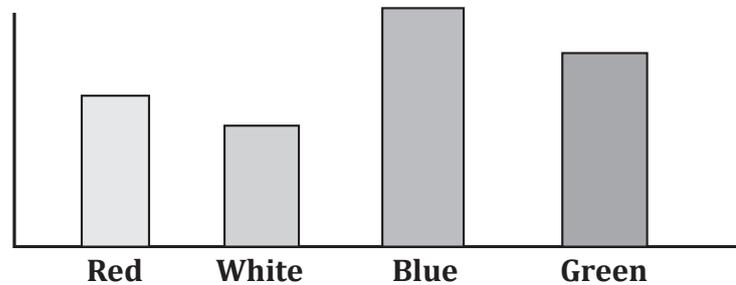
20 The ratio of the lengths, widths and heights of a cuboid and cube are 3:1, 1:1 and 2:1 respectively. How many of these cubes can fit into 5 cuboids?

- (A) 20      (B) 25      (C) 30      (D) 35      (E) 40





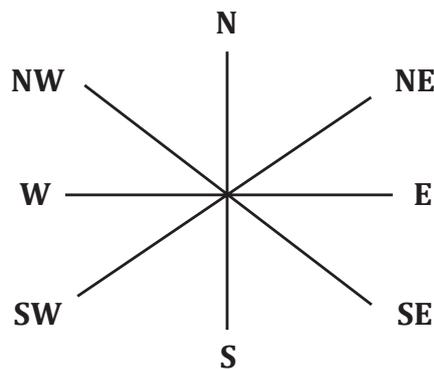
- 21 The bar chart below shows the survey of favourite colours of students in a class. Unfortunately the information about the number of students was lost. It is only known that 7 students have stated White as their favourite colour. How many students are likely to have Blue as their favourite?



- (A) 5                      (B) 7                      (C) 14                      (D) 21                      (E) 3
- 
- 22 I bought 10 bags of sweets for £1.50 each. Then I sold 9 of them for £1.80 each and threw 1 away as it was damaged. How much profit did I make?

- (A) £1.30                      (B) £3.00                      (C) £1.20                      (D) £0.30                      (E) 50 pence
- 

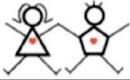
- 23 I have turned clockwise from SE to NE. How many degrees have I turned?



- (A)  $90^{\circ}$                       (B)  $225^{\circ}$                       (C)  $245^{\circ}$                       (D)  $315^{\circ}$                       (E)  $270^{\circ}$
- 
- 24 If  $a = 10$ ,  $b = 3a$  and  $c = \frac{b}{2}$ , what is the value of  $2c + 3b - 6a$ ?

- (A) 90                      (B) 60                      (C) 100                      (D) 120                      (E) 30



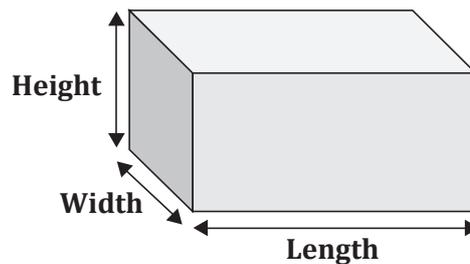


- 25 A square is cut into three rectangles as shown, so that the sum of the perimeters of the three rectangles is 56cm. What is the length of a side of the square?



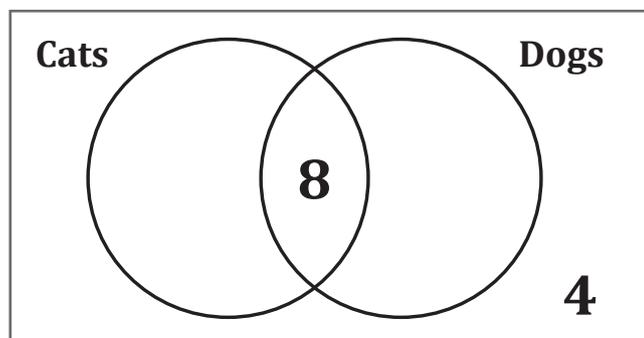
- (A) 6cm      (B) 8cm      (C) 9cm      (D) 10cm      (E) 7cm
- 

- 26 The height of the cardboard box below is 30 cm and length is 50cm. What is its total surface area if the volume is  $0.03\text{m}^3$ ?



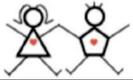
- (A)  $4900\text{cm}^2$       (B)  $5600\text{cm}^2$       (C)  $6200\text{cm}^2$       (D)  $4200\text{cm}^2$       (E)  $4600\text{cm}^2$
- 

- 27 There are 30 students in a class and the venn diagram below shows the information of their pets. It is known that the number of students who ONLY have cats is twice the number of students who ONLY have dogs. What is the number of students who only have cats?

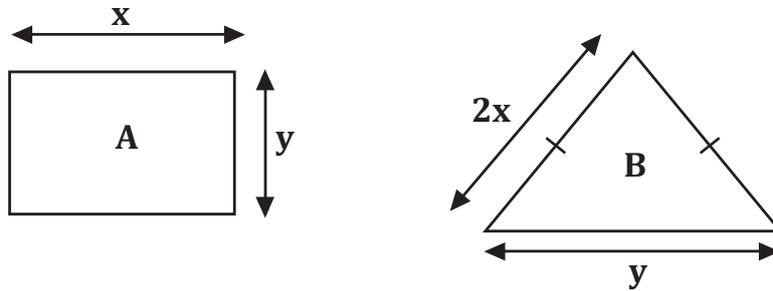


- (A) 4      (B) 3      (C) 6      (D) 5      (E) 12





- 28 The picture below shows a rectangle A and an isosceles triangle B (not to scale).  
What is the sum of the perimeters A and B?



- (A)  $4x + 2y$     (B)  $2x + 2y$     (C)  $4x + 3y$     (D)  $5x + 2y$     (E)  $6x + 3y$
- 

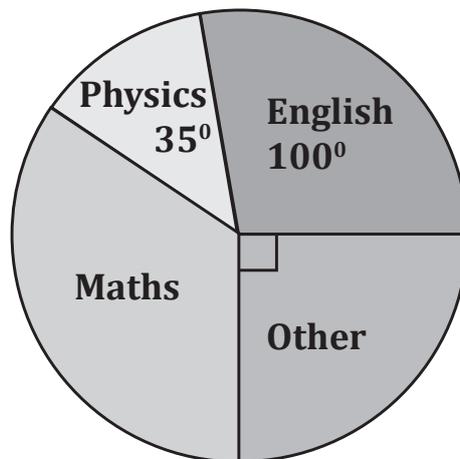
- 29 Work out the value of  $3^3 - 2 \times 6 \div 3 + (12 - 2 \times 3)$ .

- (A) 56    (B) 11    (C) 29    (D) 80    (E) 53
- 

- 30 What fraction is equivalent to  $6\frac{1}{4}\%$ ?

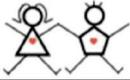
- (A)  $\frac{3}{8}$     (B)  $\frac{1}{16}$     (C)  $\frac{1}{4}$     (D)  $\frac{3}{8}$     (E)  $\frac{3}{16}$
- 

- 31 There are 160 students in Year 6. The pie chart shows the data of the favourite subject of students. How many students liked Maths?



- (A) 60    (B) 30    (C) 80    (D) 50    (E) 100





- 32 Bus A travels from Gravesend and terminates at Strood, while bus B starts from Gravesend and continues onto Maidstone. The time taken by the bus B to travel from Gravesend to Maidstone is twice the time taken by bus A to travel from Gravesend to Strood. At what time does bus B arrive in Maidstone?

	<b>Bus A</b>	<b>Bus B</b>
Gravesend	11:12 am	11:27 am
Higham	11:31 am	
Strood	11:40 am	
Maidstone	-	?

(A) 12:27pm (B) 12:23pm (C) 11:55am (D) 13:27pm (E) 12:07pm

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- 33 I am travelling back to UK from USA and wish to exchange \$70 into pounds. If £1 is \$1.40, how much, in pounds, do I get?

(A) £98 (B) £80 (C) £84 (D) £50 (E) £60

---

- 34 John wants to buy a book costing £12.50, a newspaper for £1.10, and 3 bananas for 30 pence each. He has only £10. How much more does he need?

(A) £2.50 (B) £3.90 (C) 90p (D) £4.80 (E) £4.50

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- 35 Istanbul is two hours ahead of London. New York is five hours behind London. If the time now in Istanbul is 3.28pm, what time is it in New York?

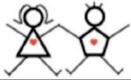
(A) 10:28 pm (B) 12:28 pm (C) 8:28 am (D) 10:28 am (E) 6:28 pm

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- 36 Hannah is 1.68m. Fiona is 3cm shorter than Hannah. Tom is 0.20 metres taller than Fiona. What is the range of their heights?

(A) 20cm (B) 23cm (C) 0.15m (D) 17cm (E) 0.21m





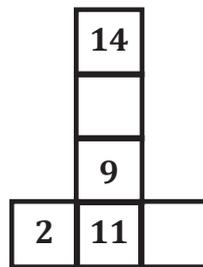
37 A square is cut into 17 small squares. 16 of those small squares have an area of  $4\text{cm}^2$  each. What could be the length of a side of the 17<sup>th</sup> square?

- (A) 4cm      (B) 2cm      (C) 5cm      (D) 6cm      (E) 1cm
- 

38 Find the biggest value of  $p$  for which  $4p - 8 < 100$ .

- (A) 25      (B) 26      (C) 27      (D) 28      (E) 29
- 

39 The diagram below shows a net of a cube. The difference between the numbers painted on opposite faces of the cube is 5. What could be the two missing numbers?



- (A) 7 and 18      (B) 7 and 5      (C) 7 and 4      (D) 7 and 16      (E) 5 and 16
- 

40 Sona wrote the smallest 4 digit number which has a prime number as its first and last digits. Ana wrote the largest 4 digit number which has a prime number as its first and last digits. What is the sum of both numbers?

- (A) 8998      (B) 9999      (C) 10000      (D) 10001      (E) 10002
- 

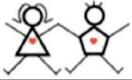
41 What is 3.1 added to 1.39 rounded to the nearest whole number?

- (A) 3      (B) 4      (C) 5      (D) 1      (E) 6
- 

42 I pack paperback books in large boxes that hold 15 books each and hardback books in small boxes that hold 10 books each. I have 68 paperback books and 37 hardback books. How many boxes do I need in total?

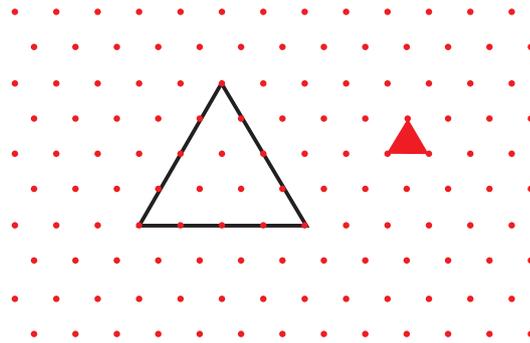
- (A) 6      (B) 7      (C) 8      (D) 9      (E) 10



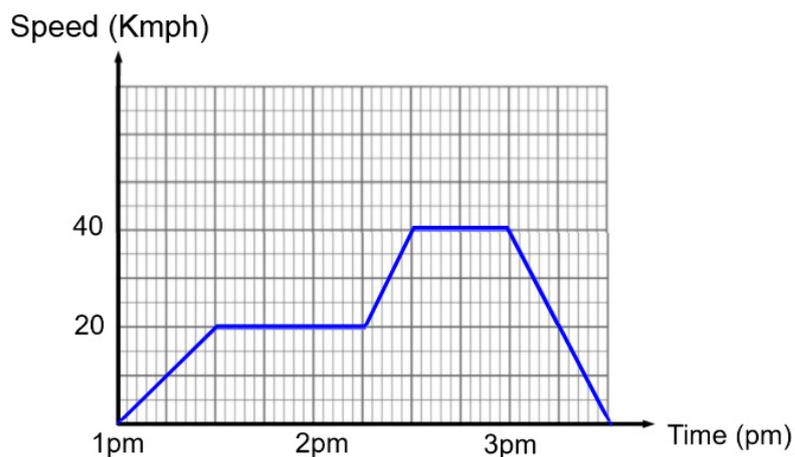


- 43 A toy consists of two parts. The top part may be coloured red, yellow or green and the bottom part blue, orange, pink or black. How many different coloured toys are possible?
- (A) 9                      (B) 12                      (C) 15                      (D) 18                      (E) 21
- 

- 44 On the grid below, the area of the small red triangle is  $p$ . What is the area of the large black triangle in terms of  $p$ ?

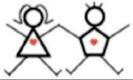


- (A)  $13p$                       (B)  $16p$                       (C)  $12p$                       (D)  $9p$                       (E)  $14p$
- 
- 45 I started driving my car at 1pm and drove till 3.30pm. The following speed-time graph shows how my speed changed with time. During which time intervals was my speed constant?



- (A) 1 - 1.30pm and 2.15 - 2.30pm                      (B) 1.30 - 2.15pm and 3 - 3.30pm  
(C) 1.30 - 2.15pm and 2.30 - 3pm                      (D) 2.15 - 2.30 pm and 3 - 3.30pm  
(E) 1.30 - 2.15pm





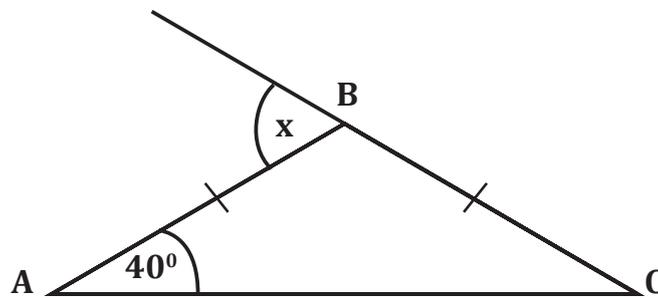
46

In a bag there are some yellow marbles, some blue marbles and some red marbles. The ratio of Blue to red to yellow marbles is 1:5:9. There are 24 more yellow marbles than the other marbles. How many marbles are there in total?

- (A) 90                      (B) 45                      (C) 60                      (D) 105                      (E) 120
- 

47

Triangle ABC in the diagram below is isosceles. What is the size of the angle  $x$ ?



- (A)  $40^\circ$                       (B)  $60^\circ$                       (C)  $70^\circ$                       (D)  $80^\circ$                       (E)  $100^\circ$
- 

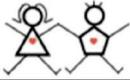
48

The following table gives nutritional information for a chocolate bar. How many grams of protein are there in 3 bars each weighing 500g?

Chocolate Bar (for every 200g)	
Fats	25 g
Carbohydrates	35 g
Proteins	50 g
Sugar	90 g

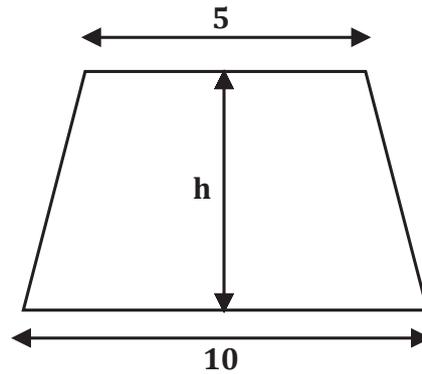
- (A) 125                      (B) 175                      (C) 250                      (D) 375                      (E) 270





49

The area of the trapezium below is 45 square units. What is missing height marked 'h'?



(A) 5

(B) 8

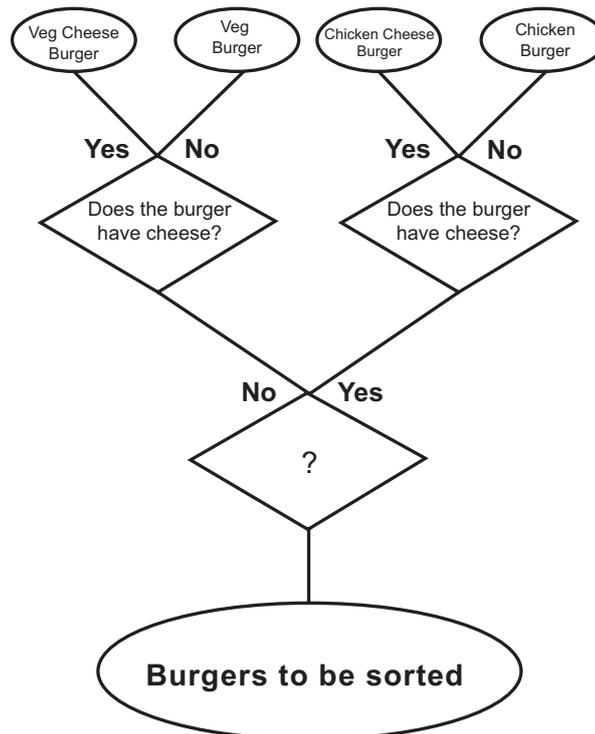
(C) 7

(D) 6

(E) 3

50

Harold works at a burger cafe and he is given a job of sorting out burgers into their respective trays. Unfortunately one of the trays in the sorting tree is not labelled. What should be the label on the missing tray?



(A) Does the burger have fish?

(B) Does the burger have chicken?

(C) Is the burger large?

(D) Is the burger Vegetarian?

(E) Is the burger hot?





Name:

Date:

School Name:

Please mark boxes with a thin horizontal line like this - .

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50

**For Parents use only**

Marks Scored: ..... Time taken: .....

Comments: .....

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