



PiAcademy

11+ Mathematics GL Style – Pack 1 Test Paper - 3

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.

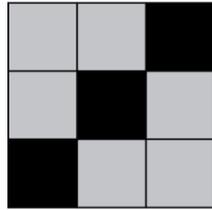


Stop working and await instructions.

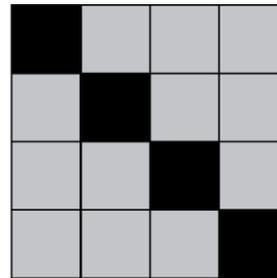
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1. These patterns are drawn on square grids



Pattern A

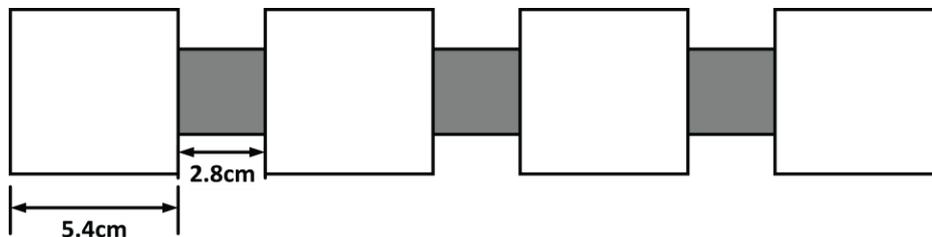


Pattern B

In pattern A, the ratio of black squares to grey squares is 1:2. What is the ratio of grey squares to black squares in pattern B?

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

2. Here is a design made from white squares and grey rectangles. All of the squares are identical, as are all of the rectangles.



Each white square has a length of 5.4cm. Each grey rectangle has a length of 2.8cm. Work out the total length of the design.

- (A) 28.6 cm (B) 21.6 cm (C) 8.4 cm (D) 30.0 cm (E) 31.4 cm

3. Jake, Kim and Lee share some money in the ratio 1 : 4 : 7
Kim gets £12 more than Jake.

How much does Lee get?

- (A) £28 (B) £35 (C) £30 (D) £21 (E) £42





4. Estimate the angle in the given diagram.

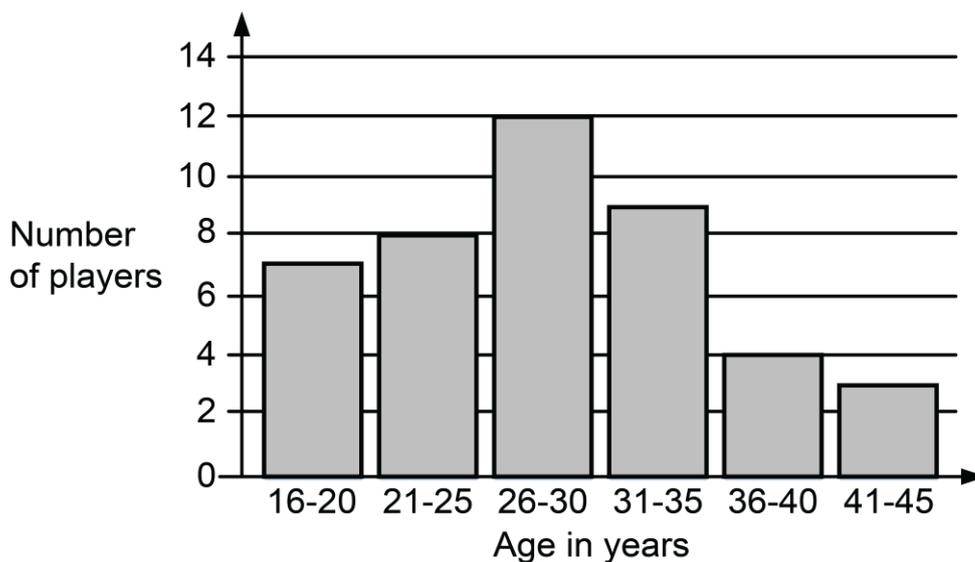


- (A) 100° (B) 150° (C) 125° (D) 90° (E) 105°
-

5. Katie's glass holds a quarter litre of juice when it is full. What is the approximate amount of juice she can pour into the glass if she fills it to the top?

- (A) 200 ml (B) 300 ml (C) 0.30 L (D) 0.20 L (E) 250 ml
-

6. This graph shows the age of players at a football club. How many players are aged 30 or younger?



- (A) 30 (B) 12 (C) 15 (D) 27 (E) 20

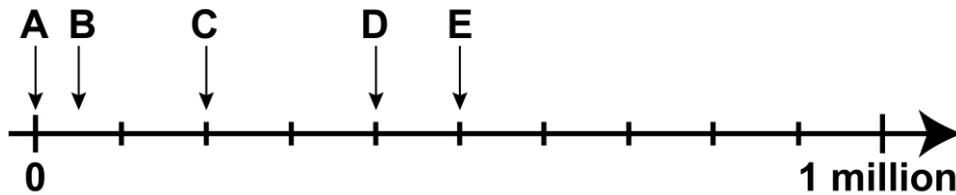




7. Emily makes 250 grams of a snack mixture. 15% of the weight is raisins, 25% is banana chips and the rest is peanuts. How many grams of peanuts does she use?

(A) 15 g (B) 200 g (C) 0.15 kg (D) 160 g (E) 0.20 kg

8. Which arrow points to the number 50 000?



9. The factors of 11 sum to 12. Which is the other number whose factors sum to 12?

(A) 8 (B) 9 (C) 5 (D) 7 (E) 6

10. A recipe for 18 scones requires 3 teaspoons of baking powder and 360 g of flour. How many teaspoons of baking powder are needed to make 48 scones?

(A) 10 (B) 9 (C) 8 (D) 6 (E) 5

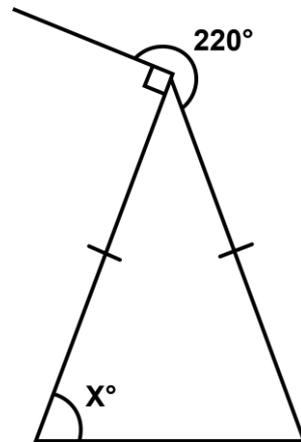
11. Emily has a bag of 20 fruit flavour sweets. 7 of the sweets are strawberry flavour, 11 are lime flavour, 2 are lemon flavour. Emily takes at random a sweet from the bag. What is the probability that Emily takes a strawberry flavour sweet?

(A) $\frac{11}{20}$ (B) $\frac{7}{20}$ (C) $\frac{9}{20}$ (D) $\frac{13}{20}$ (E) $\frac{2}{20}$





12. Work out the value of x .



- (A) 75° (B) 130° (C) 80° (D) 65° (E) 60°
-

13. In a supermarket storeroom, there are
7 boxes of tomato soup
5 boxes of pea soup
4 boxes of chicken soup

There are 24 tins in every box.
How many tins of soup are there altogether?

- (A) 440 (B) 384 (C) 360 (D) 436 (E) 336
-

14. There are three lamps in a room. They are labelled A, B and C.
Lamp A flashes every 30 seconds.
Lamp B flashes every 90 seconds.
Lamp C flashes every two minutes.

The three lamps start flashing at the same time.

How many times in one hour will the three lamps flash at the same time?

- (A) 11 (B) 12 (C) 15 (D) 8 (E) 9





15. There are 18 men in a room.
 $\frac{1}{2}$ of the men is wearing an orange shirt.
 $\frac{1}{3}$ of the men are wearing a pink shirt.
The rest of the men are wearing a grey shirt. Work out the number of men wearing a grey shirt.

(A) 6 (B) 4 (C) 3 (D) 5 (E) 8

16. Liam thinks of a number. He multiplies the number by 5 and subtracts 60 from the result.
His answer equals the number he started with.

What was the number Liam started with?

(A) 15 (B) 18 (C) 17 (D) 25 (E) 20

17. My watch gains 8 minutes every 4 hours. If I set my watch to correct time at 12 pm.
What will be the time shown on the watch after 9 hours on the same day?

(A) 9:48 pm (B) 9:16 pm (C) 9:18pm (D) 9:20pm (E) 9:24 pm

18. Here is a two-stage number machine.



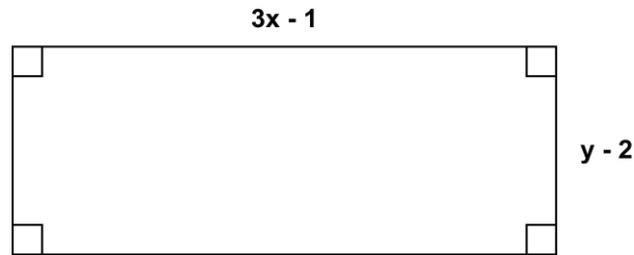
What is the operation in the second box if the input is 10 and the output is 37?

(A) $\times 2$ (B) $+8$ (C) -3 (D) $+7$ (E) $\times 7$





19. Give the perimeter of the following rectangle in its simplest form. All length are given in cm.



- (A) $2(3x - 1) + 2(y - 2)$ (B) $6x + 2y - 6$
(C) $6x - 2 + 2y - 4$ (D) $6x + 2y - 2$
(E) $4x + 2y - 4$
-

20. If the word PHOENIX is turned 180° anti-clockwise, which letters look the same?

- (A) P, H, O, X (B) H, O, N, X
(C) I, X, O, E, H (D) H, O, E, N, P
(E) X, I, H, O, N
-

21. If three dozen pencils cost £5.40. What is the cost of one pencil?

- (A) £1.80 (B) 25p (C) 30p (D) £0.18 (E) 15p
-

22. How many lines of symmetry are there for a parallelogram?

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

23. A box has a rectangular lid. In how many ways can the lid be turned so that it still fits the box?

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





24. A wooden cube has a volume of 512 cm^3 . How long is the cube's edge?

- (A) 12 (B) 8 (C) 10 (D) 16 (E) 9
-

25. Sophie hires out hot tubs. This is the formula she uses to calculate the cost of hiring the hot tub.

$$\text{Cost in } \pounds = 50 \times \text{numbers of days} + 40$$

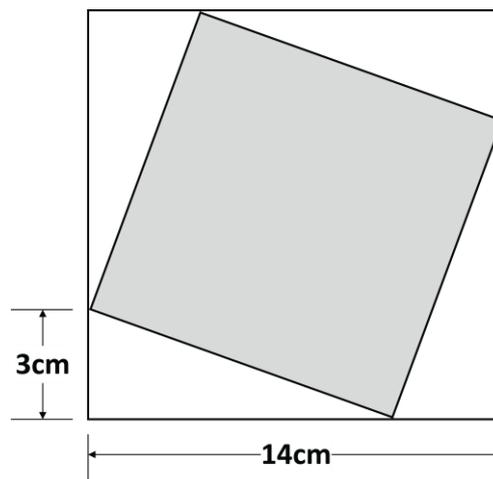
Sarah hires the hot tub for one week. How much does it cost her?

- (A) £350 (B) £530 (C) £390 (D) £420 (E) £630
-

26. A bag of peanuts cost £1.35 for a bag. Lara has £10 to spend on peanuts. How many bags of peanuts can she get for £10?

- (A) 7 (B) 8 (C) 5 (D) 6 (E) 9
-

27. The diagram shows a shaded square inside a larger square. Calculate the area of the shaded square.



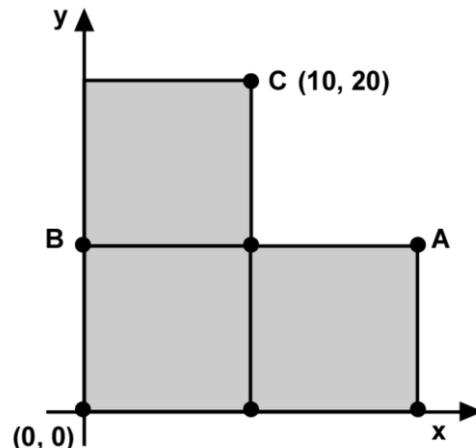
- (A) 196 cm^2 (B) 130 cm^2 (C) 154 cm^2 (D) 121 cm^2 (E) 144 cm^2





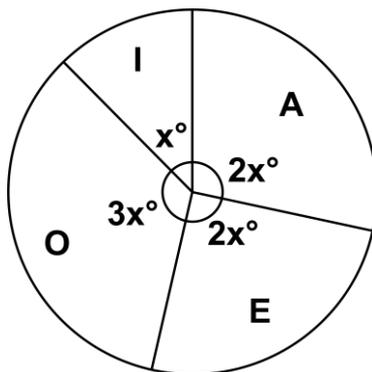
28. The diagram shows three identical squares.
C is the point (10, 20).

What are the coordinates of A?



- (A) (10, 15) (B) (20, 20) (C) (20, 10) (D) (10, 25) (E) (15, 10)
-

29. A group of adults were asked to name their favourite vowel. The pie chart below shows the results.



If 1200 adults were asked, how many said O?

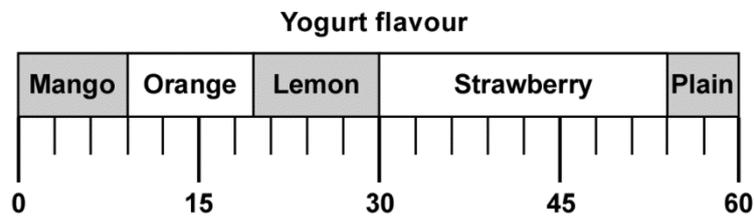
- (A) 400 (B) 600 (C) 350 (D) 550 (E) 450
-
30. 1800 can be written as $2^a \times 3^b \times 5^c$. Find a, b and c.

- (A) $a = 3, b = 3, c = 3$ (B) $a = 2, b = 3, c = 2$
(C) $a = 3, b = 2, c = 3$ (D) $a = 3, b = 2, c = 2$
(E) $a = 2, b = 2, c = 3$





31. 60 children each chose their favourite flavour of yoghurt. This chart shows the results.



How many more children chose strawberry than plain yoghurt?

- (A) 16 (B) 18 (C) 12 (D) 10 (E) 14
-
32. Part of a set of school lockers are shown in the diagram here: In which row is the locker number A28?

Row 1	A1	A4	A7	A10	...
Row 2	A2	A5	A8	A11	...
Row 3	A3	A6	A9	A12	...

- (A) Row 3 (B) Row 1
(C) Row 2 (D) No sufficient information
(E) None of the above
-
33. Akram is x cm tall.
Brian is 12cm taller than Akram.
Christina is 3cm shorter than Akram.
Write an expression, in terms of x , for the mean of their heights, in centimetres.

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

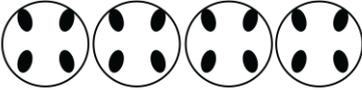
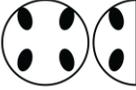




37. Arya was born on 21st September 1999. Her dad is exactly 27 years older than her. In which year was her dad born?

(A) 1988 (B) 1987 (C) 1972 (D) 1975 (E) 1985

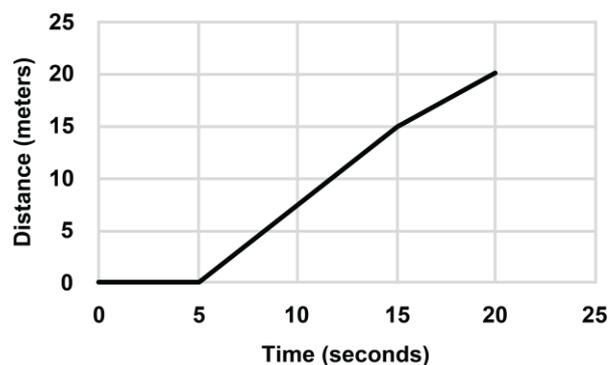
38. The pictogram gives information about the number of goals scored in a local football league in each of 3 weeks. Find the total number of goals scored in three weeks.

First week	
Second week	
Third week	

Key:  represents 4 goals

(A) 28 (B) 30 (C) 26 (D) 34 (E) 29

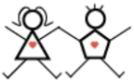
39. Phoebe is driving her new car. The following is a distance-time graph of her journey:



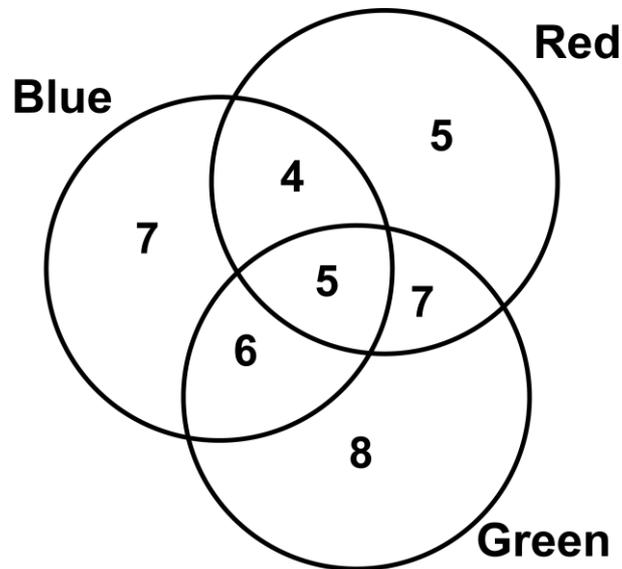
What speed is she travelling at between 5 and 15 seconds?

(A) 2 m/s (B) 1 m/s (C) 0 m/s (D) 2.2 m/s (E) 1.5 m/s





40. The colours of some flags were recorded. How many flags had no red on them?



- (A) 20 (B) 25 (C) 21 (D) 16 (E) 19
-
41. This table shows the ages of some children.

Name	Age	
Fred	7 years	4 Months
Harriet	7 years	0 Months
Isla	6 years	10 Months
Julian	7 years	6 Months
Kate	6 years	11 Months
Asim	6 years	11 Months

How many children are older than Kate?

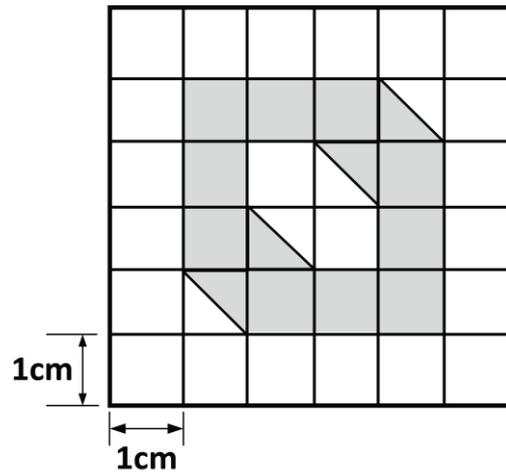
- (A) 4 (B) 3 (C) 2 (D) 5 (E) 1





42. Here is a 1cm square grid.
Some of the grid is shaded.

What is the area that is shaded?



- (A) 16 (B) 14 (C) 12 (D) 18 (E) 20

43. Sarah has the following coins and notes in her bag. How much money she has with her in total?



- (A) £34 (B) £42 (C) £36 (D) £38 (E) £33

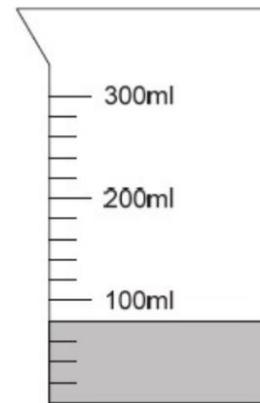




44. Hassan has a jug with some water in it as shown in the picture.

He adds another 180 millilitres of water.

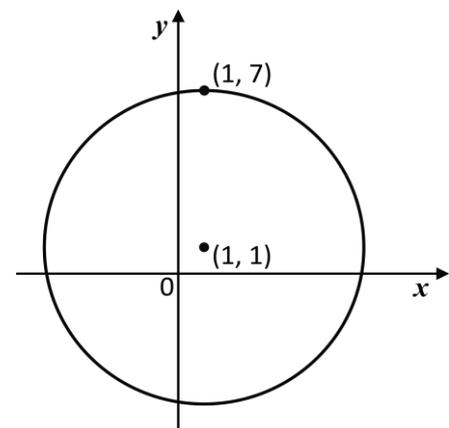
What is the total amount of water in the jug after adding the 180ml?



- (A) 380 ml (B) 250 ml (C) 200 ml (D) 260 ml (E) 320 ml
-

45. Here is a circle with its centre at the point (1, 1). The point (1, 7) is at the circumference of the circle.

Which of these points is inside the circle?



- (A) (8, 2) (B) (7, 4) (C) (2, 5) (D) (9, 2) (E) (2, 10)
-

46. A tin of cat food costs 30p.
A shop has a special 'pay for 2 tins, get 1 tin free' offer on the cat food.
Kastala wants 12 tins of cat food. Work out how much she pays?

- (A) £2.40 (B) £2.80 (C) £3.00 (D) £3.60 (E) £3.20





47. Which of these numbers is closest to 20?

- (A) 20.17 (B) 19.93 (C) 19.73 (D) 20.08 (E) 20.15
-

48. A cat is chosen at random from a group.

The probability that the cat is male is $\frac{5}{8}$.

There are 42 female cats in the group.

Work out the number of cats in the group.

- (A) 120 (B) 70 (C) 82 (D) 90 (E) 112
-

49. A, B and C stand for three different numbers.

The mean of A and B is 45.

The mean of B and C is 35.

$$A + B + C = 100$$

Calculate the values of A, B and C

- (A) $A = 20, B = 30, C = 40$ (B) $A = 50, B = 20, C = 60$
(C) $A = 30, B = 40, C = 20$ (D) $A = 20, B = 50, C = 30$
(E) $A = 30, B = 60, C = 10$
-

50. Alice is holding a 3D shape in her hand.

The shape has 6 vertices and 9 edges and 5 faces.

Which of the following could be the shape?

- (A) Cylinder (B) Triangular Prism (C) Cube (D) Cuboid (E) Pyramid



11+ Maths - GL Style (Pack 1) - Test Paper 3

ANSWER MARKING SHEET



Name: _____

Date: _____

School Name: _____

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

1	2	3	4	5	6	7	8	9	10
A <input type="checkbox"/>									
B <input type="checkbox"/>									
C <input type="checkbox"/>									
D <input type="checkbox"/>									
E <input type="checkbox"/>									
11	12	13	14	15	16	17	18	19	20
A <input type="checkbox"/>									
B <input type="checkbox"/>									
C <input type="checkbox"/>									
D <input type="checkbox"/>									
E <input type="checkbox"/>									
21	22	23	24	25	26	27	28	29	30
A <input type="checkbox"/>									
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31	32	33	34	35	36	37	38	39	40
A <input type="checkbox"/>									
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41	42	43	44	45	46	47	48	49	50
A <input type="checkbox"/>									
B <input type="checkbox"/>									
C <input type="checkbox"/>									
D <input type="checkbox"/>									
E <input type="checkbox"/>									

For Parents use only

Marks Scored: Time taken:

Comments:

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