PiAcademy

11+ Mathematics
SET Style - Pack 2
Test Paper - 8

Instructions:

1. The time allowed is 50 minutes for 48 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.

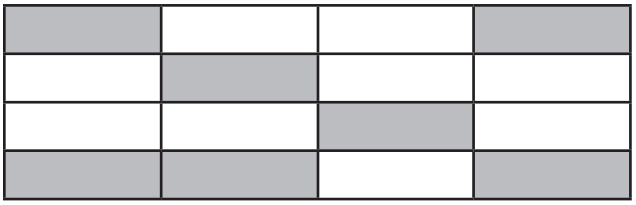
Do not turn the page until told to do so.

Stop working and await instructions.

1 Work out 13 x 3 - 6 (12 ÷ 6) + 5

(A) 22 (B) 32 (C) -3 (D) 27 (E) 30

2



What fraction of the grid is shaded?

(A) $\frac{1}{2}$ (B) $\frac{1}{4}$ (C) $\frac{1}{5}$ (D) $\frac{7}{16}$ (E) $\frac{11}{16}$

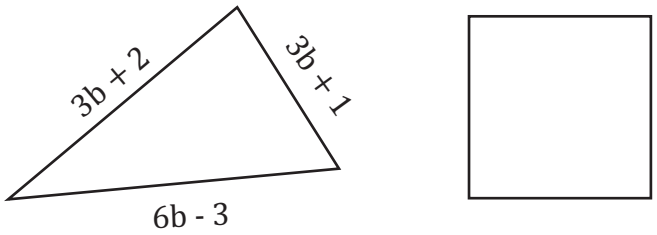
3 In a magic square, the sums of the numbers in each row, column and diagonal are equal. The given magic square contains all the numbers from 1 - 9.

8	1	
3		7
	9	

What is the sum of the numbers in the shaded regions?

(A) 7 (B) 9 (C) 11 (D) 13 (E) 15

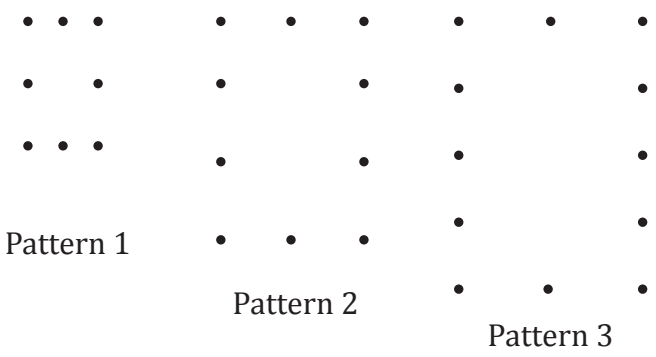
4 The perimeters of the triangle and the square are equal.



What is the side length of the square?

(A) 3b (B) 4b - 3 (C) 3b + 2 (D) 3b - 3 (E) 2b + 3

5



Observe the given patterns made up of dots.

Find the number of dots in pattern 10.

(A) 28 (B) 26 (C) 32 (D) 24 (E) 80

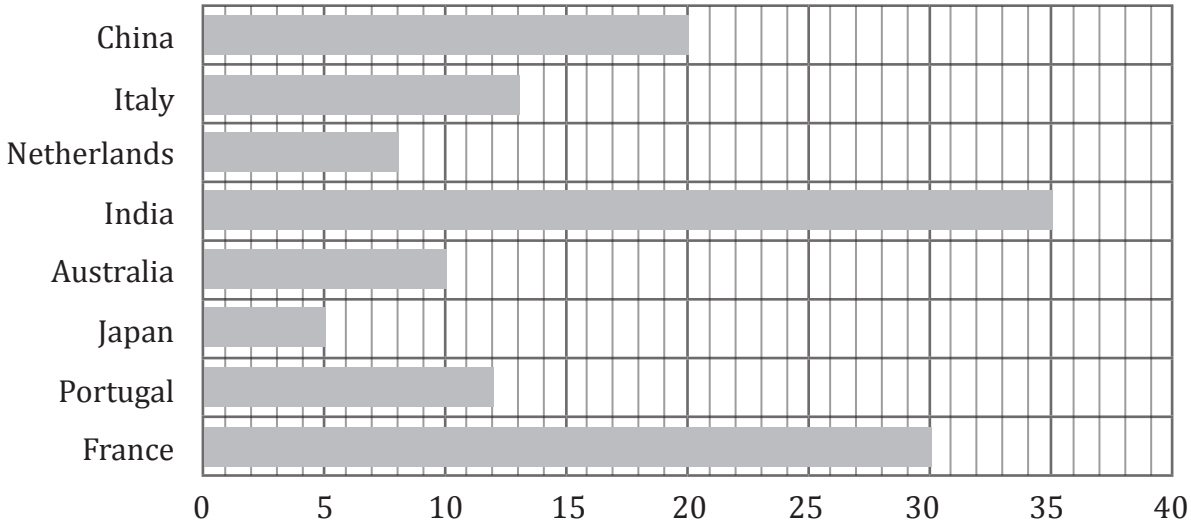
6 There are 32 coloured balls in a box and a quarter of them are blue. One-eighth of the remaining balls are red and the rest are yellow. Find the number of yellow balls.

(A) 12 (B) 16 (C) 24 (D) 22 (E) 21

7 What is 1.75 divided by $\frac{35}{110}$

(A) 11 (B) 2.2 (C) 50 (D) 55 (E) 5.5

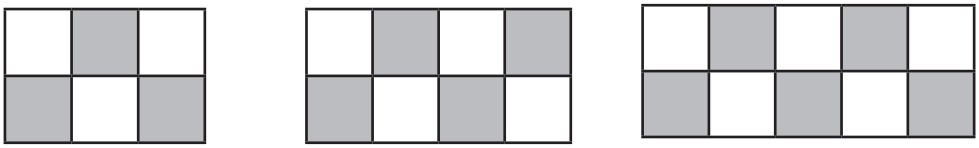
8 A group of people in an airport were asked about their destinations. The results are shown in a bar chart below:



How many more people were travelling to Europe than Asia?

(A) 10 (B) 2 (C) 6 (D) 3 (E) 5

9 Here is a pattern made from grey and white tiles.



Pattern 1 Pattern 2 Pattern 3

How many grey tiles will be there in the first row for Pattern 12?

(A) 7 (B) 12 (C) 11 (D) 4 (E) None of these

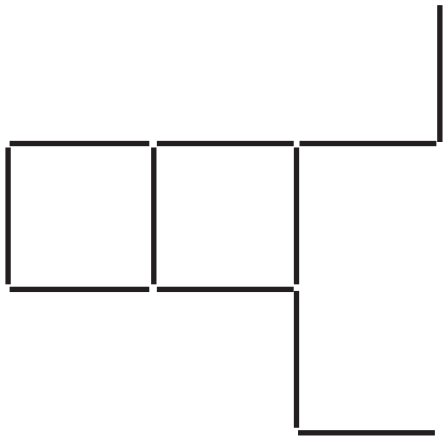
10 What is 199 x 37?

(A) 5859 (B) 6613 (C) 7363 (D) 7749 (E) 5775

11 What is 33.33% of the difference between 4^2 and 10?

(A) 6 (B) 2 (C) 12 (D) 9 (E) 3

12 The diagram shown below is made up of matchsticks.



What is the smallest number of matchsticks needed so that this diagram will have exactly one line of symmetry?

(A) 3 (B) 4 (C) 5 (D) 6 (E) None of these

13 What is 15 + (2 x 6 ÷ (2 + 1) - 7) ?

(A) 10 (B) 13 (C) 15 (D) 12 (E) 17

14 Michael is facing South and he turns 225° anti-clockwise. In which direction does he face now?

(A) North (B) North - East (C) North - West

(D) South - East (E) South - West

15 Simplify: $n(n - 3) - n(n + 2)$

(A) $2n^2 - n + 6$ (B) -5 (C) -5n (D) $2n^2$ (E) None of these

16 The heights of 5 students are 3.3 ft, 3.2 ft, 3.5 ft, 3.9 ft and 4.1 ft. Find the mean height of these students in centimetres.
(Note: 1 foot is approximately 30 cm.)

(A) 3.6 (B) 100 (C) 180 (D) 110 (E) 108

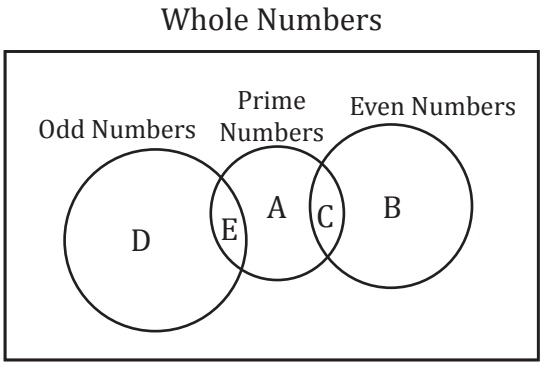
17 Write the fraction $\frac{9}{20}$ in percentage.

(A) 18% (B) 27% (C) 45% (D) 50% (E) 54%

18 James has twice the number of marbles that Mary does. Mary has three times the number of marbles that Adam does. If the total number of marbles is 60, how many marbles does James have?

(A) 6 (B) 12 (C) 18 (D) 36 (E) 48

19 Study the Venn diagram below.



Where will the numbers 2 and 3 be on the Venn diagram?

(A) B and D (B) C and E (C) A and E (D) D and B (E) E and C

20 What is 60% of one-third of 21?

(A) 4.2 (B) 2.1 (C) 4.0 (D) 5.4 (E) 12.6

21 What is the surface area of a cube with a volume of 0.027 cm^3?

(A) 0.9 cm^2 (B) 0.81 cm^2 (C) 4.7 cm^2 (D) 4.86 cm^2 (E) 0.54 cm^2

22 On a plan of a swimming pool the scale used was 1:200. If the length and width of the swimming pool on the plan are 25 cm and 10 cm, what is the actual area of the swimming pool?

(A) 500 cm^2 (B) 10000 cm^2 (C) 5 m^2 (D) 1000 m^2 (E) None of the these

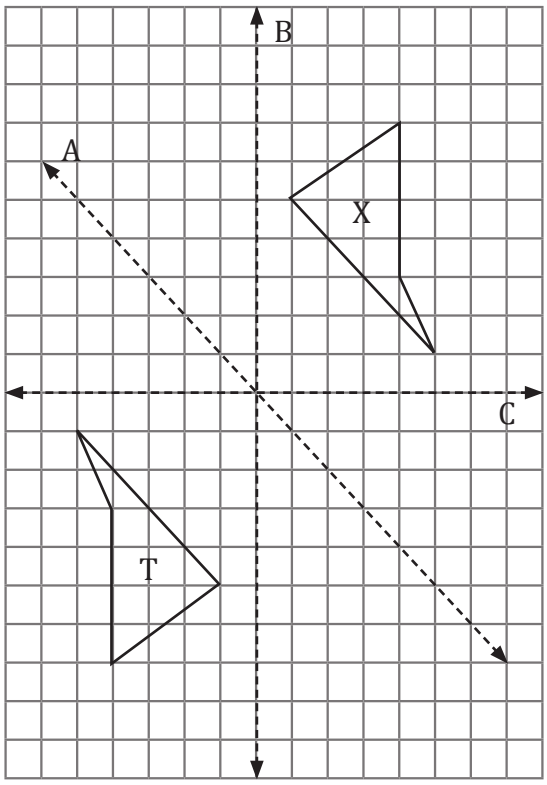
23

	12		18	
4				62
		3		
	27		48	
10		24		72

How many numbers in the rectangle are multiples of 4?

(A) 3 (B) 4 (C) 5 (D) 6 (E) 7

24



Shape X is transformed to shape T. What transformations are applied to do this?

(A) Reflection in line C

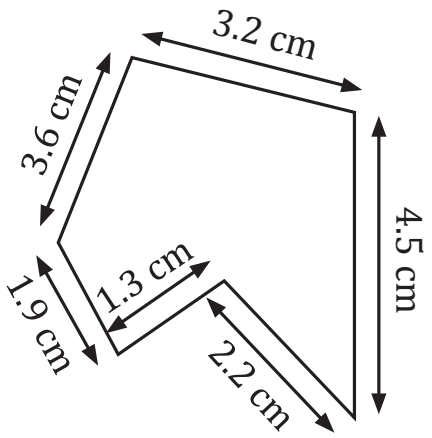
(B) Reflection in line A and then reflection in line C

(C) Reflection in line B

(D) Reflection in line B and then reflection in line C

(E) Reflection in line A and then reflection in line B

25



Calculate the perimeter of the shape.

(A) 17.3 cm (B) 16.4 cm (C) 17.0 cm (D) 16.7 cm (E) None of these

26 Work out (12 - 5) x (15 ÷ 3) - (3 x 5 + (3 x 6 ÷ 3))

(A) 26 (B) 34 (C) 14 (D) 32 (E) None of these

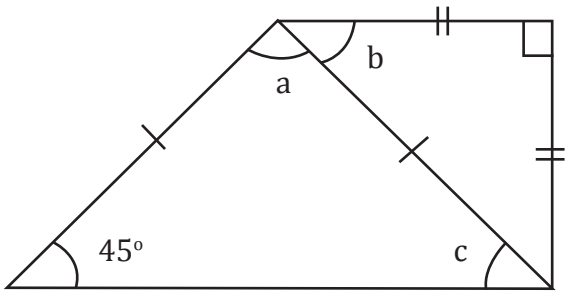
27 In a football stadium, out of 34542 fans, there are 23415 children. How many adults are in the stadium?(Write your answer to the nearest thousand.)

(A) 12000 (B) 11200 (C) 11000 (D) 10000 (E) 11100

28 Here is a set of numbers: 2, 4, 5, 0. If you can use any combination of numbers from the given set and can insert a decimal point anywhere, which of these numbers can you not make?

(A) $\frac{49}{2}$ (B) $\frac{12}{5}$ (C) $\frac{21}{50}$ (D) 1.8 x 3 (E) $\frac{491}{2}$

29 Observe the diagram below made out two isosceles triangles.



Find the sum of angles a, b and c in degrees.

(A) 135 (B) 90 (C) 180 (D) 270 (E) 225

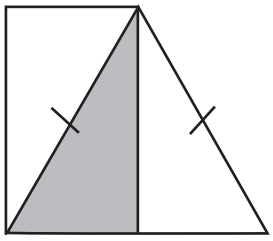
30 On a farm which has only hens and cows, there are 32 heads and 88 legs.
How many cows and hens are there on the farm?

(A) 10 cows and 22 hens (B) 15 cows and 17 hens

(C) 13 cows and 19 hens (D) 12 cows and 20 hens

(E) 11 cows and 15 hens

31 The diagram below is made up of a rectangle and an isosceles triangle.
(The diagram is not to scale)



If the length of the rectangle is 10 cm and the base length of the isosceles triangle is 8 cm, what is the area of the shaded region?

(A) 40 cm^2 (B) 20 cm^2 (C) 50 cm^2 (D) 25 cm^2 (E) 80 cm^2

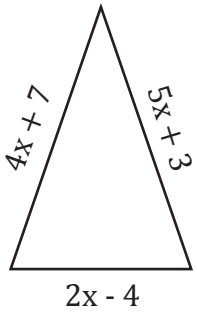
32 How many fifths are there in 3?

(A) 6 (B) 9 (C) 12 (D) 15 (E) 10

33 What is the place value of 3 in 134876?

(A) Hundredths (B) Thousands (C) Ten thousands (D) Hundreds (E) Tens

34 The diagram below shows an isosceles triangle:



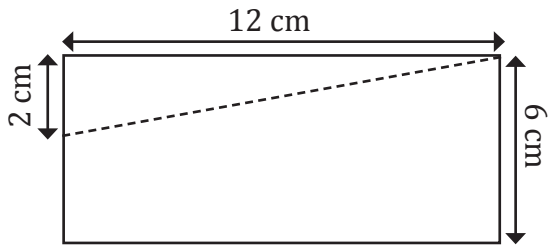
All measurements are in cm. Find the perimeter of the triangle

(A) 43 cm (B) 46 cm (C) 50 cm (D) 53 cm (E) 11x - 6 cm

35 Tim shared his sweets with Joe in the ratio 2:7. If Joe got 15 sweets more than Tim, how many sweets were there in total?

(A) 9 (B) 18 (C) 15 (D) 27 (E) 21

36 A triangle and a trapezium make up a rectangle as shown below.



Find the area of the trapezium.

(A) 24 cm^2 (B) 48 cm^2 (C) 60 cm^2 (D) 70 cm^2 (E) 50 cm^2

37 20 packets of erasers cost £25.00. What is the price of 5 packets of erasers?

(A) £2.50 (B) £3.75 (C) £3.25 (D) £6.25 (E) £6.00

38 Convert 30 days into minutes.

(A) 72400 (B) 43200 (C) 74800 (D) 18000 (E) 44800

39 Two numbers are in the ratio of 3:5. If 10 is added to one of the numbers, the ratio becomes 1:1. Find the two numbers.

(A) 3 and 5 (B) 6 and 16 (C) 9 and 19 (D) 12 and 20 (E) 15 and 25

40 What is the place value of 6 in 24.06?

(A) Hundreds (B) Thousands (C) Hundredths (D) Thousandths (E) Tens

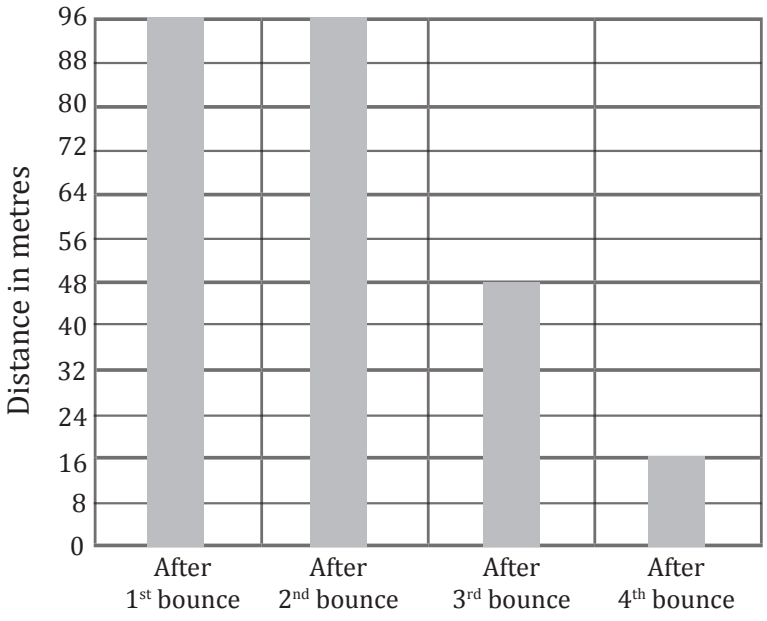
41 How much distance does a robot cover, if it runs at a speed of 20 m/s for 2 hours?

(A) 40 m (B) 2400 m (C) 1440 m (D) 144 km (E) 40 km

42 The mean of four numbers x, y, 3 and 5 is 4 and the range of these numbers is 4.
Find x and y.

(A) 1 and 5 (B) 2 and 6 (C) 3 and 7 (D) 1 and 7 (E) 0 and 8

43 In a scientific experiment, a new type of ball is dropped from a certain height. The ball bounces in a particular pattern as shown in the bar graph.



How high will the ball go after the fifth bounce?

(A) 4 metres (B) 0.5 metres (C) 2 metres (D) 1 metre (E) 0.8 metres

44 Find the missing number to make this calculation correct.

$$34 + 12 \times \square = 13 \times 5 - 7$$

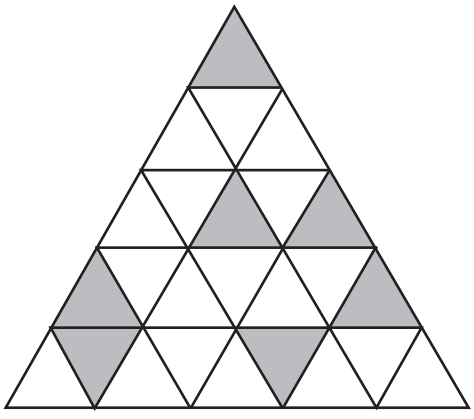
(A) -3 (B) 2 (C) 3 (D) -2 (E) 5

45 Find the value of x for the following equation:

$$4x - 30 = x + 30$$

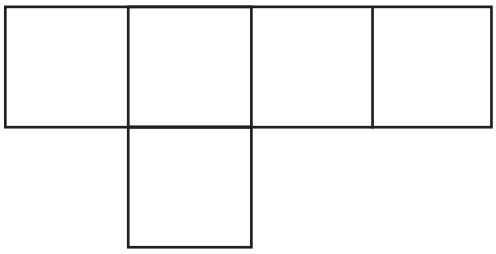
(A) 10 (B) 15 (C) 20 (D) 12 (E) 0

46 The figure shows an equilateral triangle divided into small identical equilateral triangles. What is the smallest number of small triangles which need to be shaded so that the figure has a line of symmetry?



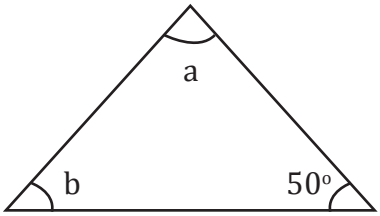
(A) 1 (B) 2 (C) 3 (D) 4 (E) 5

47 If the area of each square is $4cm^2$, what is the outer perimeter of the whole shape? (The diagram is not to scale)



(A) 12 cm (B) 48 cm (C) 24 cm (D) 20 cm (E) 32 cm

48



If the above figure is an isosceles triangle, what is the difference between a and b, in degrees?

(A) 10 (B) 20 (C) 30 (D) 40 (E) 50

11+ Maths SET Style (Pack 2) - Test Paper 8
ANSWER MARKING SHEET

Name: Date:

School Name:

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

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

For Parents use only

Marks Scored: ---------- **Time taken:** ----------

Comments: ----------

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