

[Turn over

1 Complete the sentence.

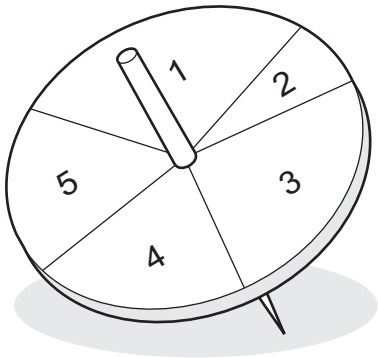
The ratio 2 : 20 is the same as the ratio 10 : [1]

2 Calculate.

$$3^3$$

..... [1]

3 Here is a spinner.



Tick (✓) the best method to find the probability of spinning a 5

spin the spinner 5 times and record the results	
spin the spinner 10 times and record the results	
spin the spinner 100 times and record the results	
spin the spinner 1000 times and record the results	

[1]

- 4 Eva does this calculation.

$$5 + 5 \times 4$$

She starts by adding 5 and 5
Then she multiplies the result by 4

Tick (✓) to show if Eva is correct.

yes ☐

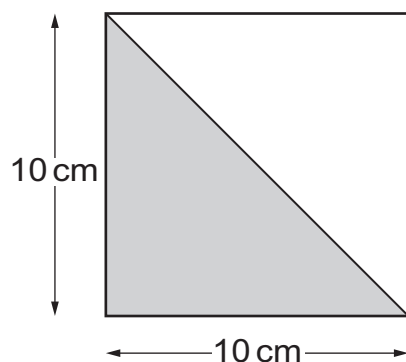
no ☐

Explain your answer.

.....

 [1]

- 5 Here is a drawing of a square.



not to scale

Calculate the area of the shaded triangle.

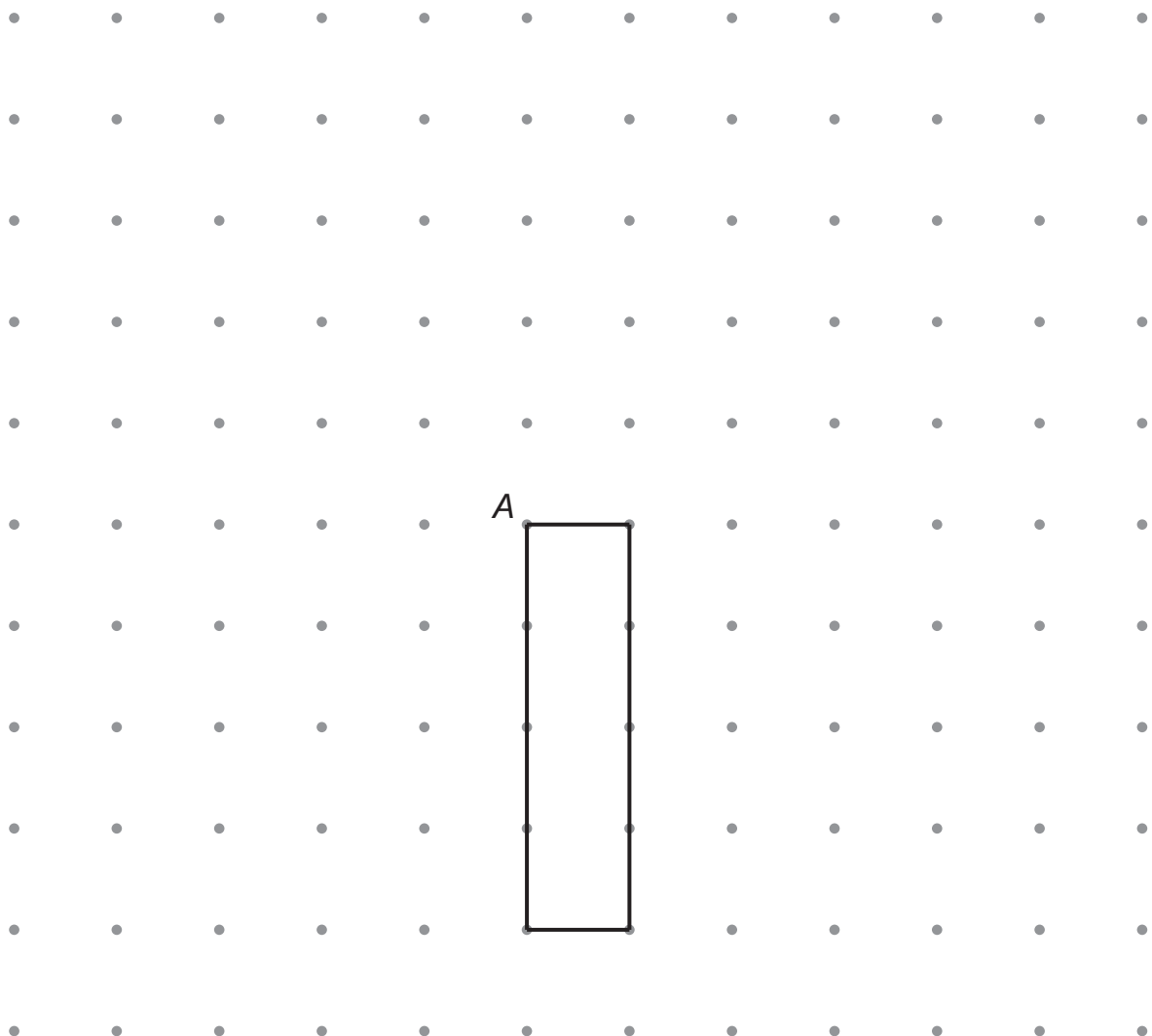
..... cm² [1]

- 6 Write a number in **each** box to complete the calculation.

$$\frac{11}{9} = \boxed{} \div \boxed{}$$

[1]

- 7 Here is a rectangle drawn on a dotted grid of squares.
Vertex *A* of the rectangle is shown.

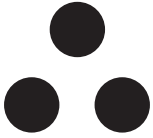


Rotate the rectangle 90° **clockwise** around the vertex *A*.

Draw the new position of the rectangle on the grid.

[1]

- 8 Here is the drawing of the spatial pattern of the 2nd triangular number.



Draw a ring around the expression that gives the number of dots in the spatial pattern of the 4th triangular number.

$3 + 3 + 3$

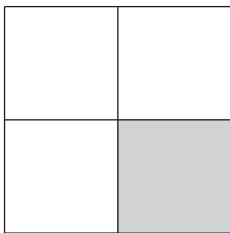
$1 + 2 + 3 + 4$

$1 + 2 + 4 + 8$

$4 + 4 + 4 + 4$

[1]

- 9 (a) Here is a shape divided into four equal squares.



Write the percentage of the shape that is shaded.

.....% [1]

- (b) Here is a rectangle divided into ten equal squares.



Shade 20% of the rectangle.

[1]

10 Here are the terms in the first three positions of a sequence.

The sequence continues in the same way.

position	term
1	6
2	12
3	18

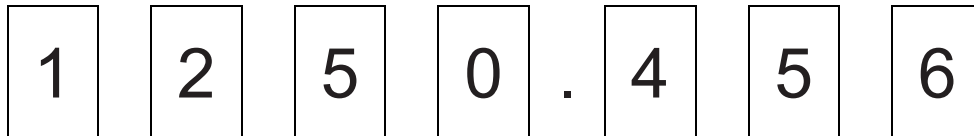
Write a number in each space to complete the sentences.

The term in position 10 is

The term in position is 42

[2]

11 Ahmed chooses a number made from digit cards.



Draw a ring around the card that represents the **thousandths** digit.

[1]

12 Write 1.5 hours in minutes.

..... minutes [1]

13 Jamila has a six-sided dice numbered from 1 to 6



She rolls the dice once.

Tick (✓) **all** the events that are **unlikely**.

event	the event is unlikely
Jamila rolls a 2	
Jamila rolls an odd number	
Jamila rolls an even number	
Jamila rolls a two-digit number	
Jamila rolls a number greater than 5	
Jamila rolls a one-digit number	

[1]

14 A shopkeeper measures the masses of seven pumpkins.

Here are the masses, in kilograms.

2 4 4 5 9 9 9

(a) Calculate the median mass of the pumpkins.

..... kilograms [1]

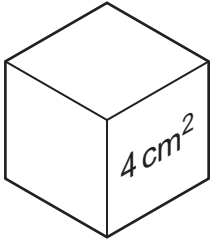
(b) Calculate the mean mass of the pumpkins.

..... kilograms [1]

15 Here is a drawing of a cube.

Each face has an area of 4 cm^2 .

not to scale



Write the **total** surface area of the cube.

..... cm^2 [1]

16 Gabriella makes a pattern from 4 identical squares.

The length of the side of each square is 3 cm.

Here is a drawing of her pattern.



not to scale

Gabriella uses a ruler to measure the perimeter of the pattern.

Suggest a way to find the perimeter **without** measuring.

.....

 [1]

17 Here is a sequence of numbers.

4 8 12 ...

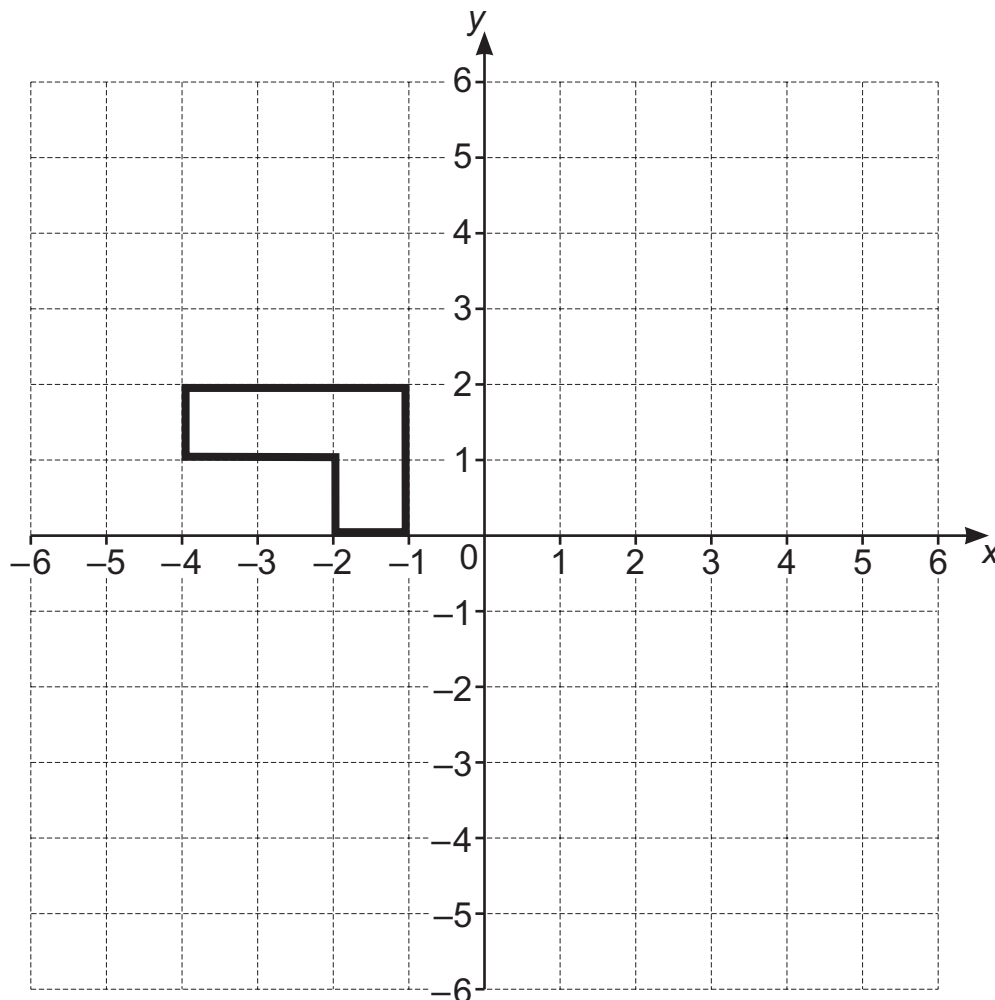
The sequence continues in the same way.

Draw a ring around **all** the numbers that are part of the sequence.

15 32 42 126 804

[1]

18 Here is a 2D shape drawn on a coordinate grid.



Translate the shape 3 squares down and 5 squares to the right.

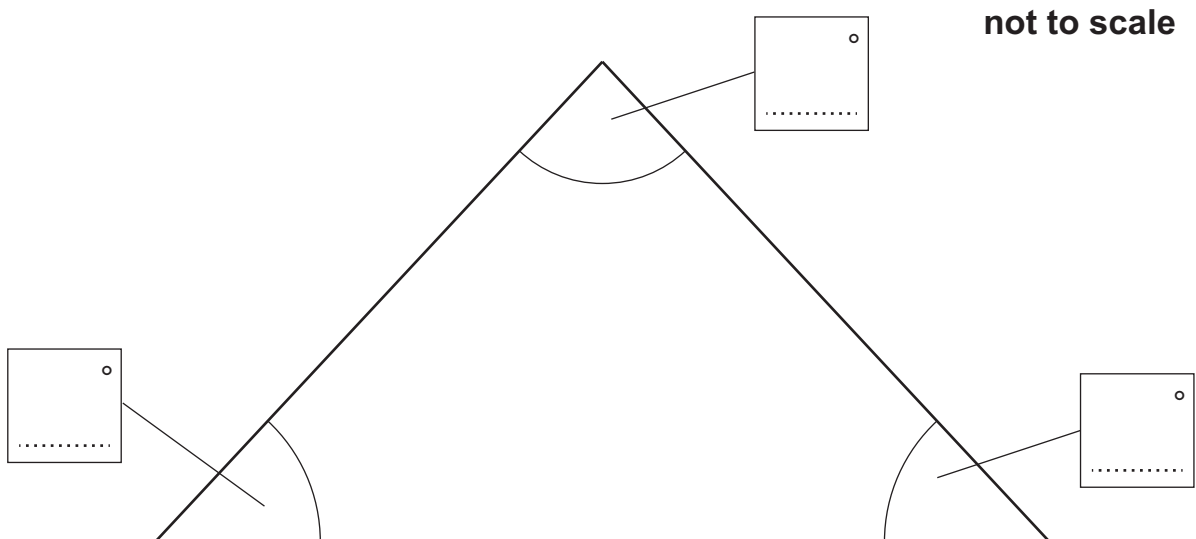
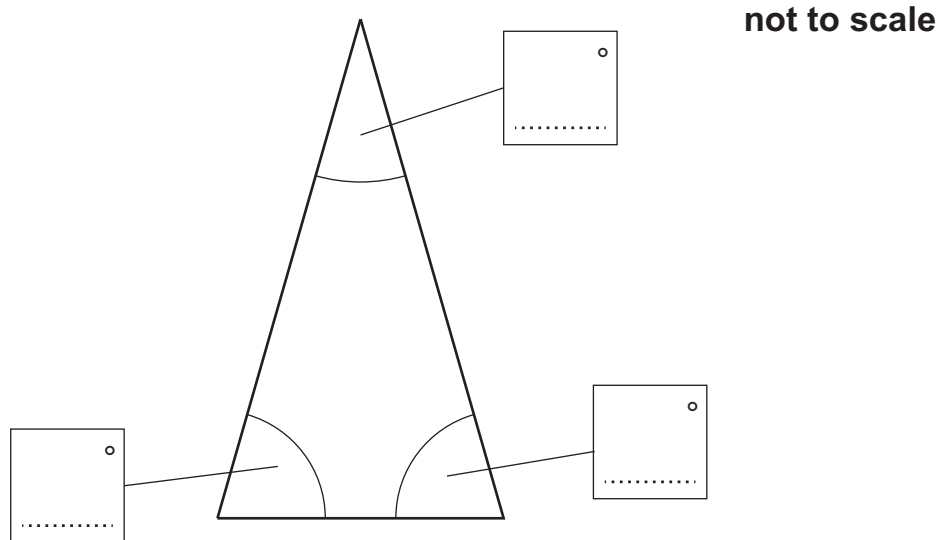
Draw the shape in its new position on the grid.

[1]

19 Rajiv draws isosceles triangles.

He knows that he can draw two **different** isosceles triangles with an angle of 80°

Here are the drawings of his two isosceles triangles.

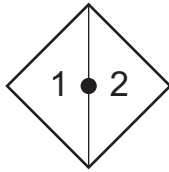


Write numbers in the boxes to show all the angles in the two different isosceles triangles.

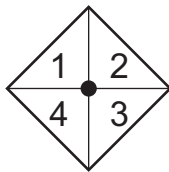
[2]

20 Oliver has four fair spinners.

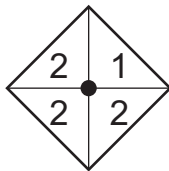
Draw a line to match each spinner with the probability that the spinner lands on 2



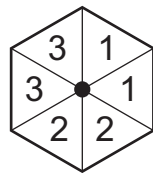
1 out of 3 chances



even chance



25% chance



75% chance

[2]

21 Here are the first three terms from the sequence of square numbers.

1

4

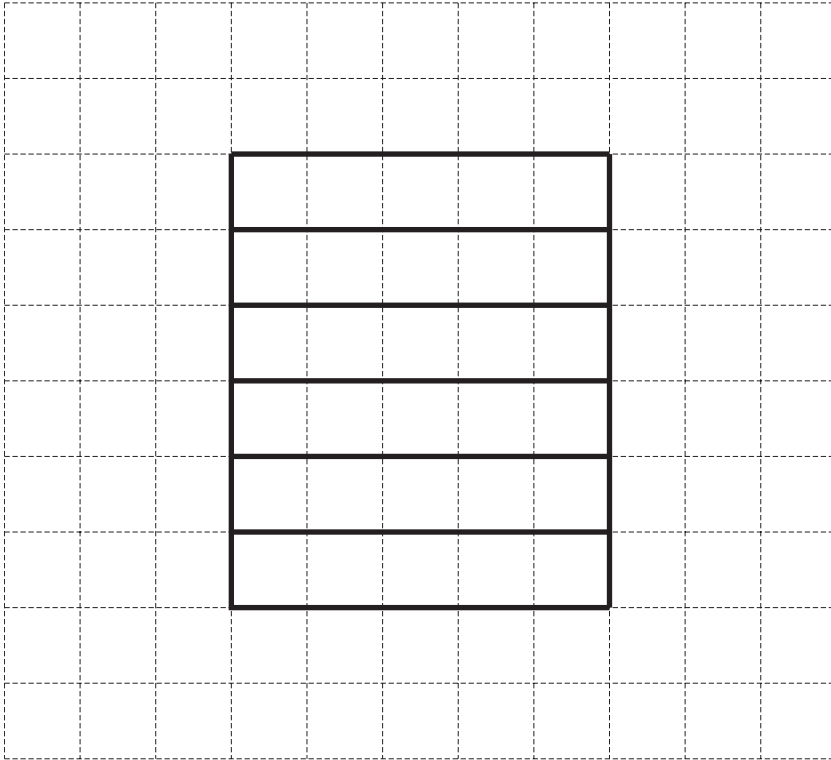
9

Write the 8th term in the sequence.

..... [1]

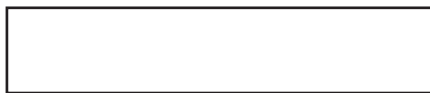
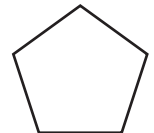
22 Carlos starts to draw the net of a prism.

He draws six shapes.



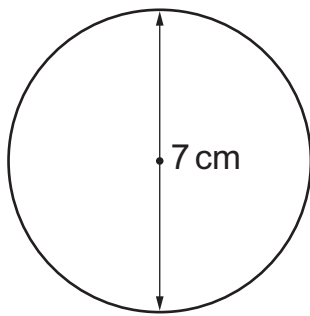
Carlos adds two more shapes to complete his net.

Draw a ring around the **two** shapes that Carlos uses to complete his net.



[1]

23 Here is a drawing of a circle.



not to scale

Draw this circle accurately.
Use a ruler and compasses.

[1]

- 24** Draw a ring around **all** the numbers that round to 100.0 when rounded to the nearest tenth.

95.21

99.59

99.95

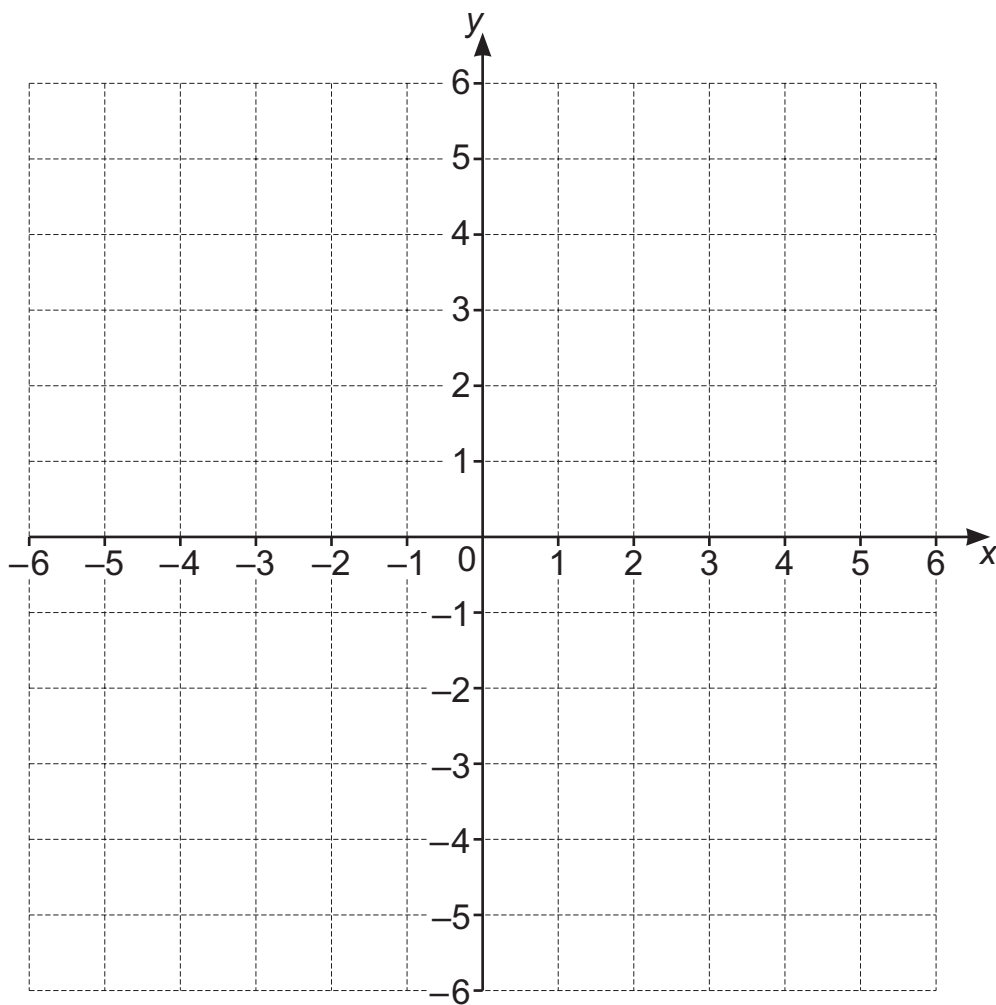
100.02

100.20

102.22

[2]

- 25** Plot point $\left(-\frac{1}{2}, -\frac{5}{2}\right)$ on the coordinate grid.



[1]

- 26** Pierre counts back from 544 in steps of 5
Here are the first five numbers Pierre says.

544

539

534

529

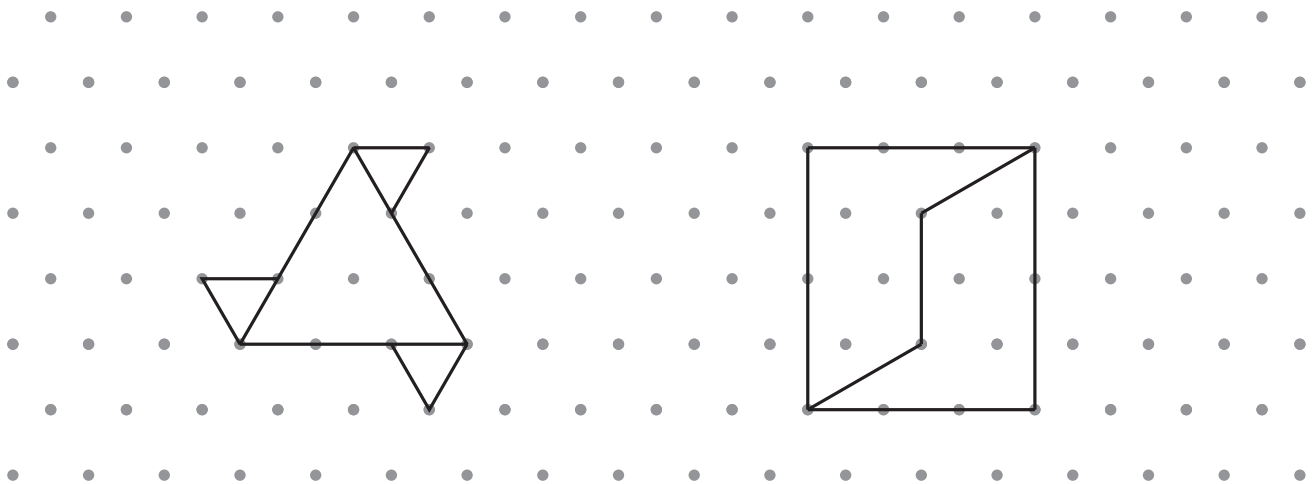
524

Write the first **two** negative numbers Pierre says.

..... and [1]

- 27** Here are two patterns drawn on a dotted grid of equilateral triangles.

Write the order of rotational symmetry for each pattern.



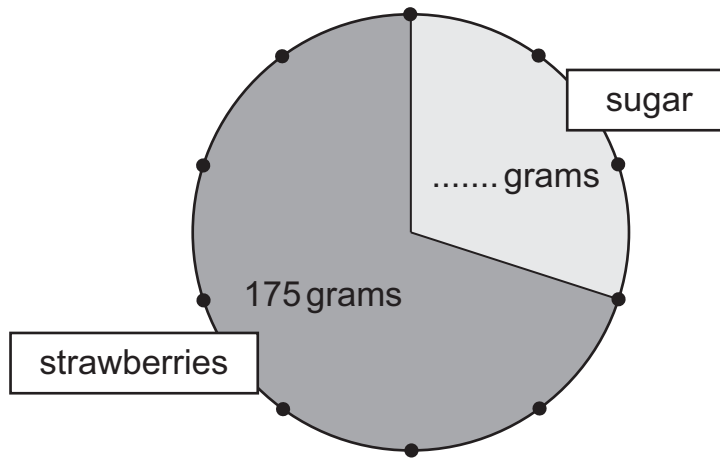
order

order

[2]

28 The pie chart shows the ingredients of strawberry jam.

strawberry jam ingredients in grams



Calculate the mass of sugar in the jam.

Show your working.

..... grams [2]

29 Here are some angles.

50°

50°

55°

60°

60°

65°

70°

70°

75°

75°

Mike joins **three** of these angles to make a straight line.

Draw a ring around **three** angles that Mike could use.

[1]

30 Safia adds two **prime** numbers.
Both her prime numbers have two digits.

7		+	4		=	1	2	0
---	--	---	---	--	---	---	---	---

Write a digit in each box to complete the calculation.

[1]

31 Write the largest number that is a common factor of 80 and 96

..... [1]

32 Samira chooses a quadrilateral.

Samira's quadrilateral has

- exactly one pair of parallel sides
- exactly two right angles.

Draw a quadrilateral that Samira could choose.

[1]

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