

Key Stage 2

Mathematics

Paper 2: Reasoning

First Name						
Middle Name						
Last Name						
Date of Birth	Day		Month		Year	
School Name						

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Instructions

You **must not** use a calculator to answer any questions in this test.

Questions and answers

You have **40 minutes** to complete this test.

Follow the instructions for each question.

Work as quickly and as carefully as you can.

If you need to do working out, you can use the space around the question.

Some questions have a method box like this:

The diagram shows a 10x10 grid. On the left side, there is a vertical box containing the text "Show your method". To the right of the grid, there is a smaller rectangular box.

For these questions you may get a mark for showing your method.

If you cannot do one of the questions, **go on to the next one.**

You can come back to it later, if you have time.

If you finish before the end, **go back and check your work.**

Marks

The number under each line at the side of the page tells you the number of marks available for each question.

1.

Circle the **greatest** number.

8,406,405

8,416,297

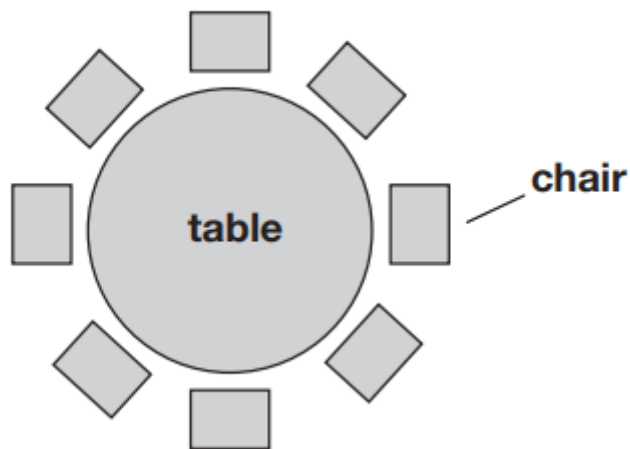
8,406,499

8,416,300

8,406,909

1 mark

2. One table can seat 8 people.



How many tables are needed to seat 56 people?

1 mark

3.

Write the missing number to make this **addition** correct.

$$600,000 + \boxed{} + 80 = 630,080$$

1 mark

4. Children estimated the amount of water in a bucket

These were the estimates of five children.

Amir	1,410 ml
Olivia	1,590 ml
Emma	1,380 ml
John	1,530 ml
Chen	1,440 ml

The exact amount of water in the bucket was 1,490 ml.

Whose estimate was **closest** to exact amount?

1 mark

Whose estimate was **furthest** from the exact amount?

1 mark

5. One tonne is 1,000 kilograms. A ship can carry a load of 4.6 tonnes.

How many **kilograms** can the ship carry?

kg

1 mark

6. Emma has a 5 litre bag of compost.

She uses 3.25 litres.



How much compost does Emma have left?

litres

1 mark

7. Ali travels to work by bus, train and by walking.

The bus ride is $\frac{3}{10}$ of the total journey.

The train ride is $\frac{4}{10}$ of the total journey.

What fraction of the total journey does Ali **walk**?

1 mark

8. Circle the improper fraction that is equivalent to $2\frac{4}{6}$

$$\frac{8}{6}$$

$$\frac{12}{6}$$

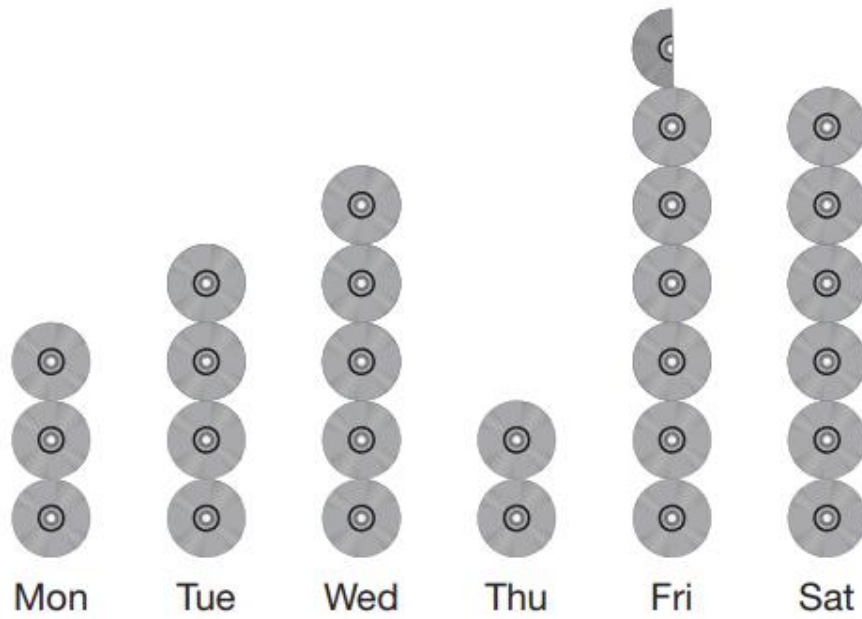
$$\frac{15}{6}$$

$$\frac{16}{6}$$

$$\frac{24}{6}$$

1 mark

9. This pictogram shows how many DVDs a shop sells in one week.



On **Thursday**, 24 DVDs were sold.

How many DVDs were sold on **Friday**?

1 mark

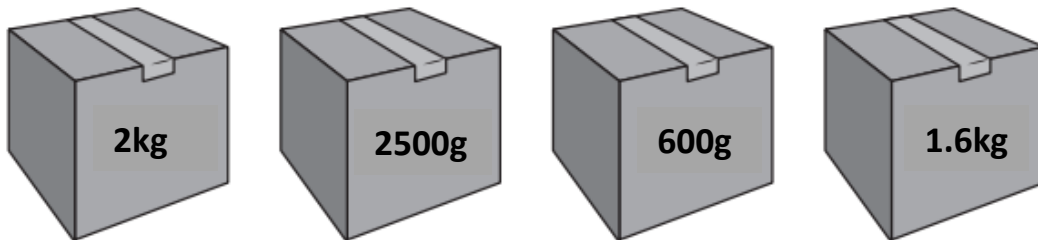
11. Write the missing values.

$$\frac{6}{10} = \frac{\square}{20}$$

$$\frac{8}{12} = \frac{2}{\square}$$

1 mark

12. William has four parcels.



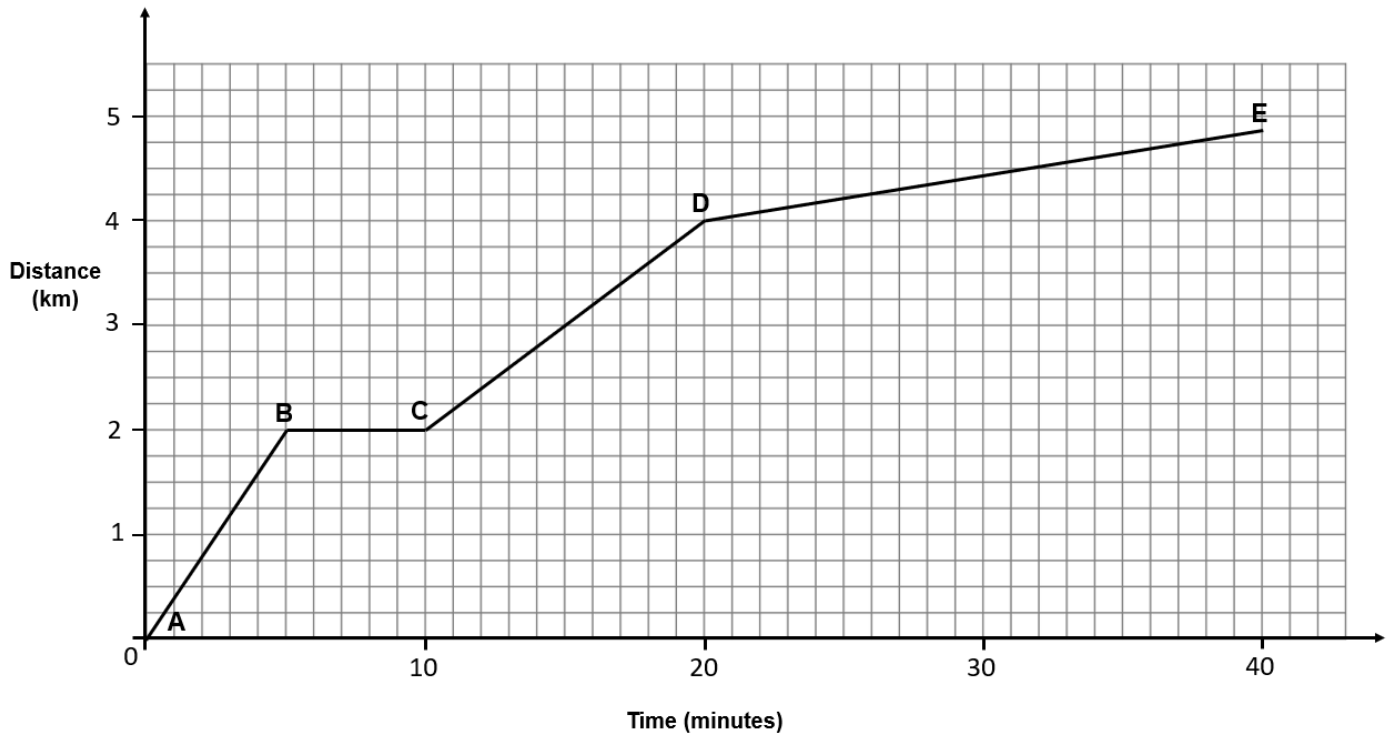
Write the masses in order, starting with the **lightest**.

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1 mark

lightest

13. Look at the graph below that shows Nita's bike ride.



Match each part of Nita's journey to the correct sentence.

A to B

Nita rests for 5 minutes.

B to C

Nita cycles for 2km in 10 minutes.

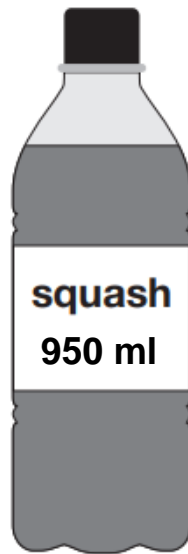
C to D

Nita cycles for less than 1km in 20 minutes.

D to E

Nita cycles for 2km in 5 minutes.

14. This 950ml bottle of squash makes 19 drinks.



How many millilitres of squash are in each drink?

1 mark

15.

Write the correct sign =, > or < in each box.

$2 \times 3 \times 4$

$2 + 3 + 4$

$4 \times 4 \times 4$

$4 + 4 + 4$

$1 \times 5 \times 5$

$1 + 5 + 5$

$0 \times 5 \times 5$

$0 + 5 + 5$

2 marks

16. Tick the numbers that round to 29.8

29.08

29.82

29.75

29.91

29.85

1 mark

17. 8 divides into 60 with a remainder of 4

Write **one** other number that divides into 60 with a remainder of 4

1 mark

18.

This sign shows the number of **empty spaces** on each level of a car park at 10 am.

P	Empty Spaces
Level 2	609
Level 1	377

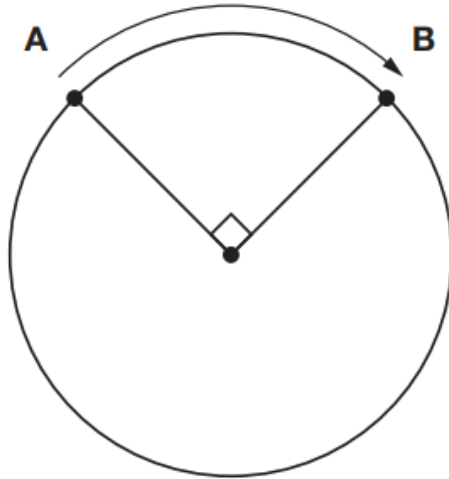
In this car park, **each** level has 900 spaces.

What is the total number of cars **parked** in the car park at 10 am?

Show your method

2 marks

19. The circumference of this circle is 80 centimetres.



Not
actual
size

What is the distance around the edge of the circle from **A** to **B**?

cm

1 mark

20. There are 360 places at a dance school.

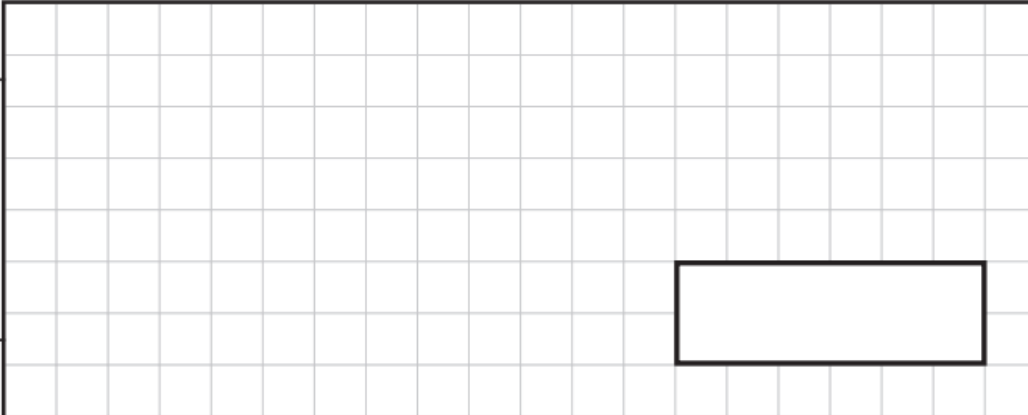
There are two age groups.

This table shows the number of classes and the number of pupils in each class for each age group at the moment.

Age in years	Number of classes	Number of pupils in each class
7–12	12	16
13–18	14	10

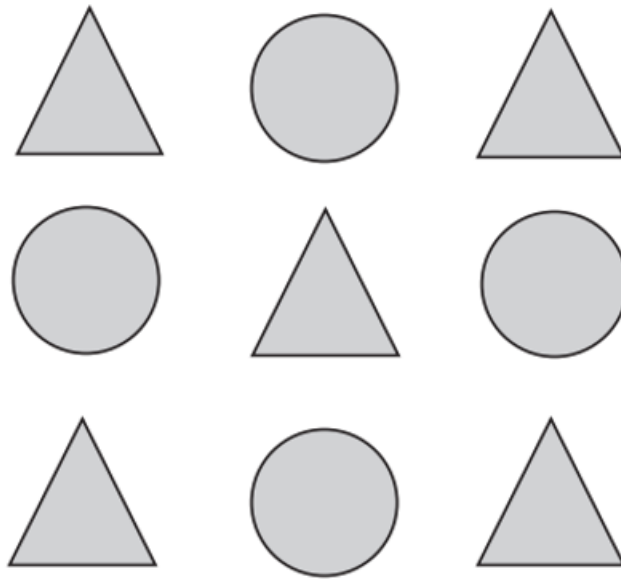
How many **more** pupils can join the dance school?

Show your method



2 marks

21.



Each shape stands for a number.

The total of the **circles** is 64.

The total of **all the shapes** is 169.

Calculate the value of each shape.

$$\triangle = \boxed{}$$

1 mark

$$\circ = \boxed{}$$

1 mark

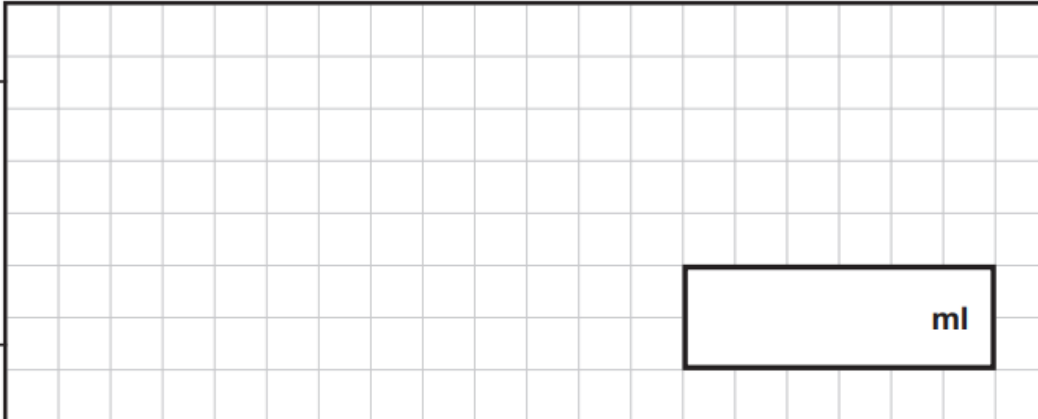
22. You can make purple paint by mixing:

- 150 ml of blue paint
- 750 ml of red paint.

Ivy wants to make some of this purple paint. She uses 600 ml of blue paint.

How much **purple** paint does she make?

Show your method

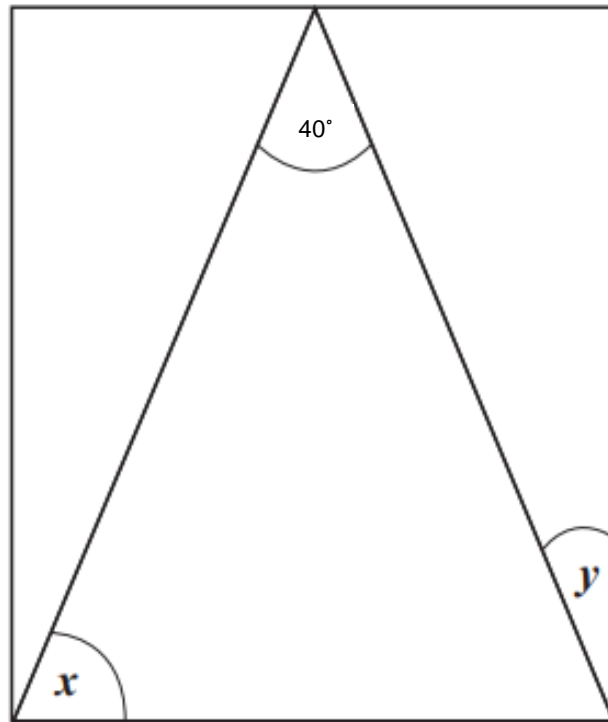


ml

2 marks

24.

Here is an **isosceles** triangle inside a rectangle.



Not to scale

Calculate the sizes of angles x and y .

Show your method

$x =$

°

$y =$

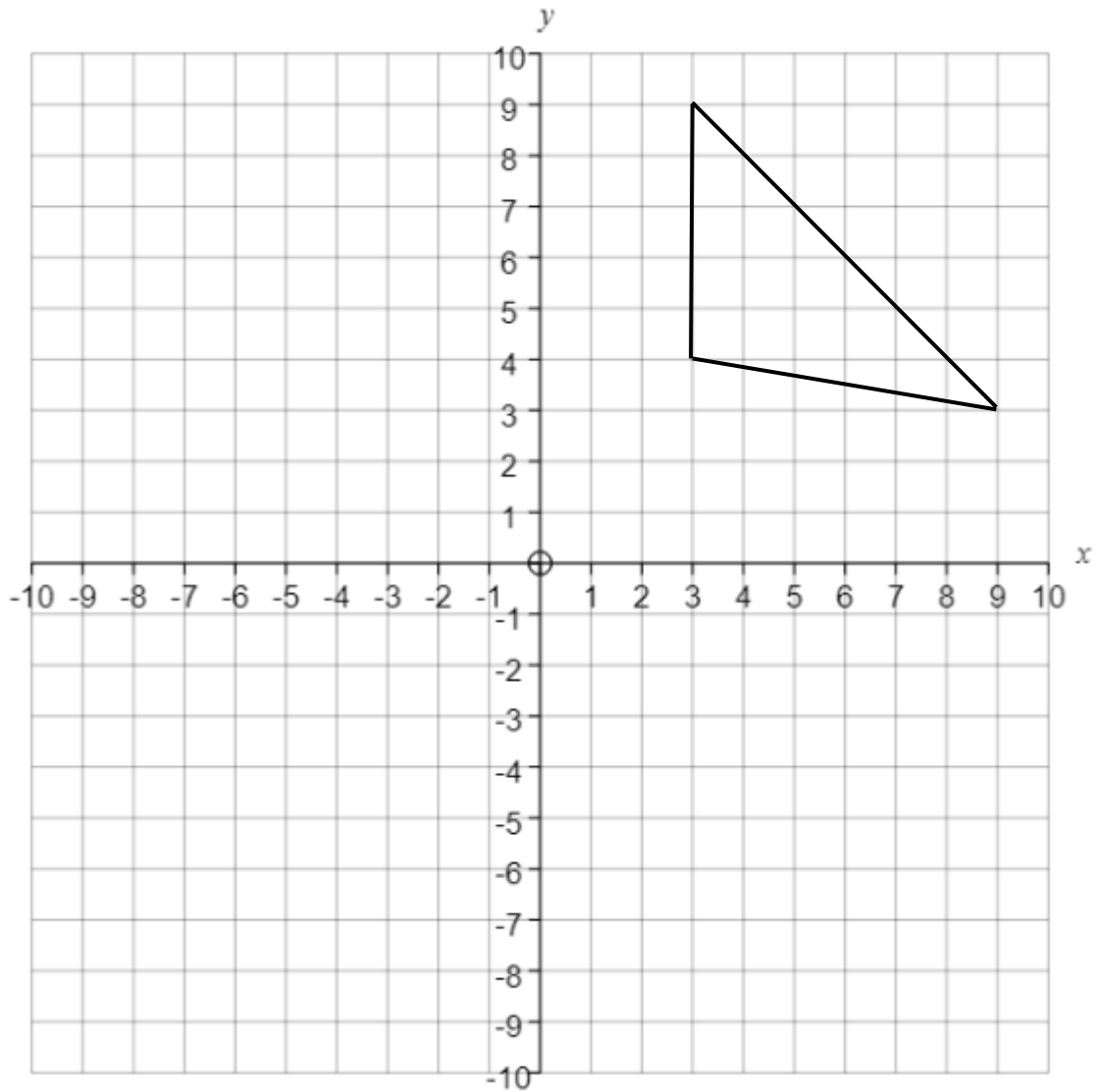
°

2 marks

25. The triangle is to be transformed on the grid as follows:

- First translate the shape 12 units down.
- Then reflect the **resulting** triangle in the y-axis.

Draw the new triangle on the grid after **each** transformation.



Use a ruler.

2 marks