2023 national curriculum tests

Key stage 2

Mathematics

Paper 2: reasoning

MODIFIED LARGE PRINT

First name _____

Middle name _____

Last name _____

Date of birth   **Day** _____ **Month** _____ **Year** _____

School name _____

DfE number _____

Note to markers

This paper should be marked using the standard mark schemes for KS2 Mathematics: Paper 2. There is additional guidance on marking some questions in this paper in the Key stage 2 Mathematics amendments to mark schemes – MLP document.

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, plus your additional time allowance.

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 any space on the page.

Some questions say: 'Show your method.'

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

If you cannot do a question, 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.

1. **Look at the four times listed below.**

11:55

11:05

11:50

05:11

Write the time from the list that is the same as 5 minutes past 11

_____

2. **Look at the five temperatures below.**

6°C   −4°C   1°C   −10°C   3°C

Write these temperatures in order, starting with the lowest.

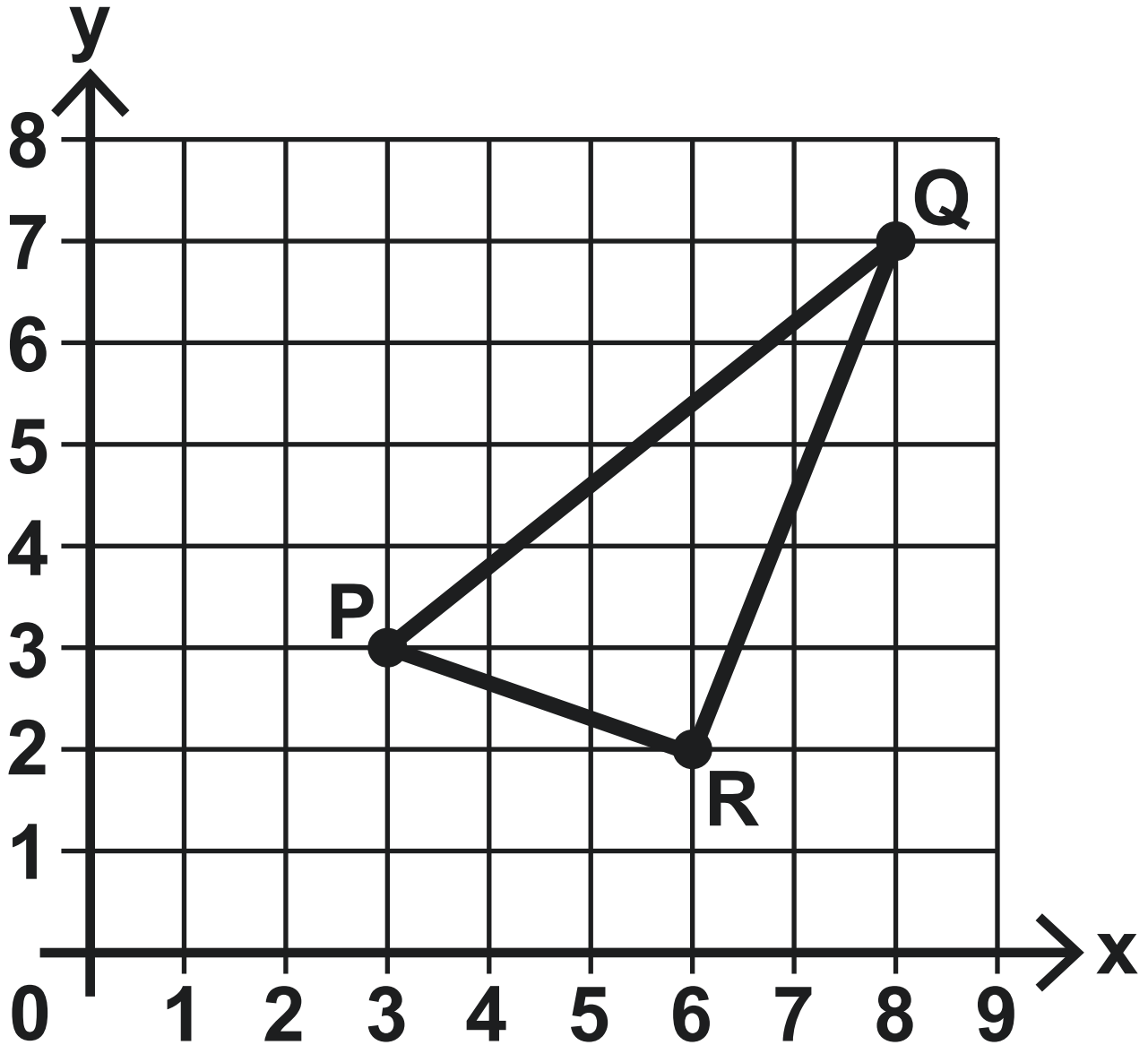lowest   _____ °C

_____ °C

_____ °C

_____ °C

_____ °C

3. **Look at the shape on the grid below.**

PQR is a triangle.

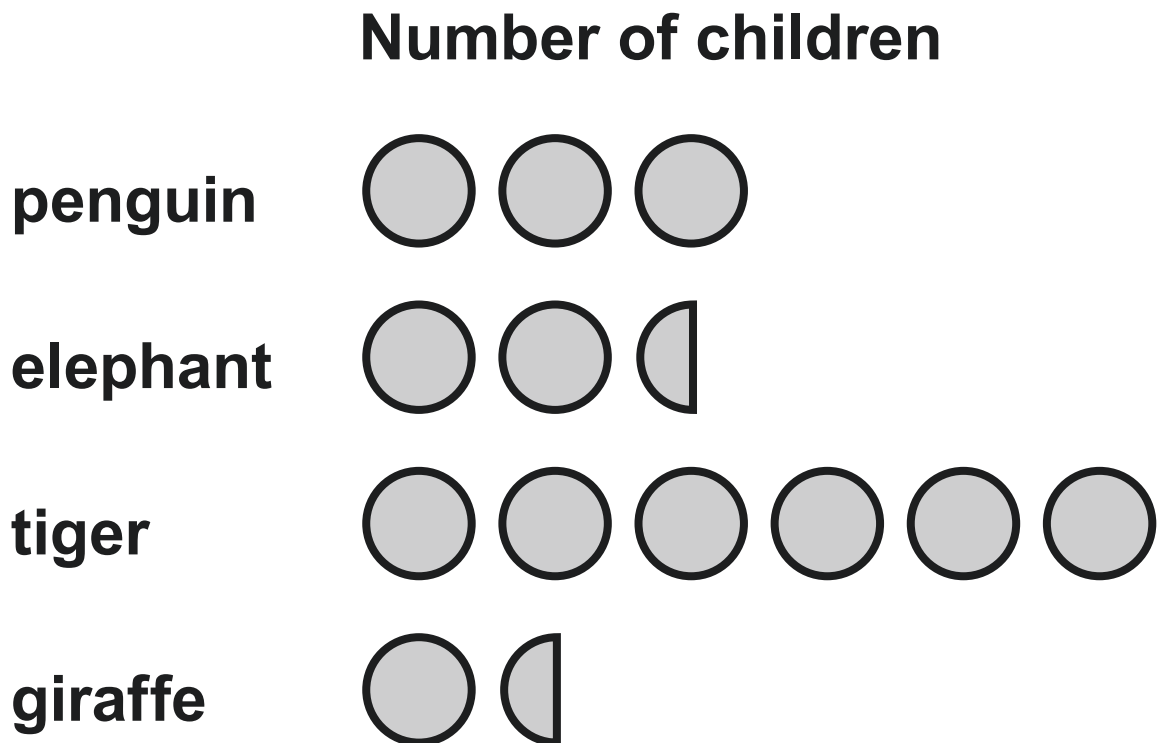**What are the coordinates of point R?**

(_____ , _____)

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The test continues on the next page

4. Some children choose their favourite zoo animal.

The pictogram below shows the results.

Key: ◯ stands for **2** children

Number of children

penguin ◯ ◯ ◯

elephant ◯ ◯ ◗

tiger ◯ ◯ ◯ ◯ ◯ ◯

giraffe ◯ ◗

How many more children choose tiger than elephant?

_____

5. Cars and motorbikes are parked in a street.

A car has **4** wheels.

A motorbike has **2** wheels.

Stefan counts **3** motorbikes and **5** cars.

He counts **28** wheels altogether.

Explain why Stefan cannot be correct.

6.   Kirsty buys **1** litre of apple juice for **£1·39**

She pays with a **£5** note.

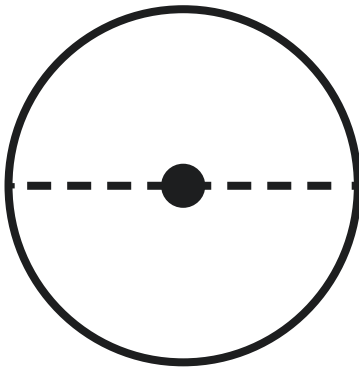How much change does Kirsty get?

£ _____

7. **Look at the number sequence below.**

75   50   25   _____   _____

Write the next two numbers in the sequence.

8. In **2012**, there were **24 372** schools in the United Kingdom.

Round the number of schools to the nearest **hundred**.

_____
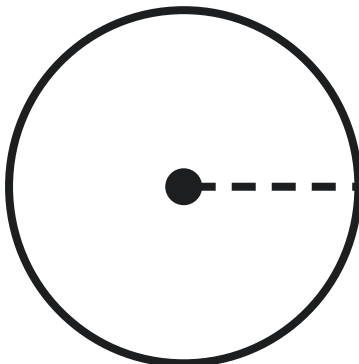
9. Look at the diagrams below showing parts of a circle.

Match each diagram to the name of the dashed line.

circumference
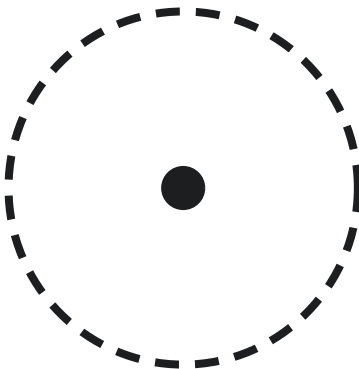
diameter

radius

10. Ken thinks of a number.
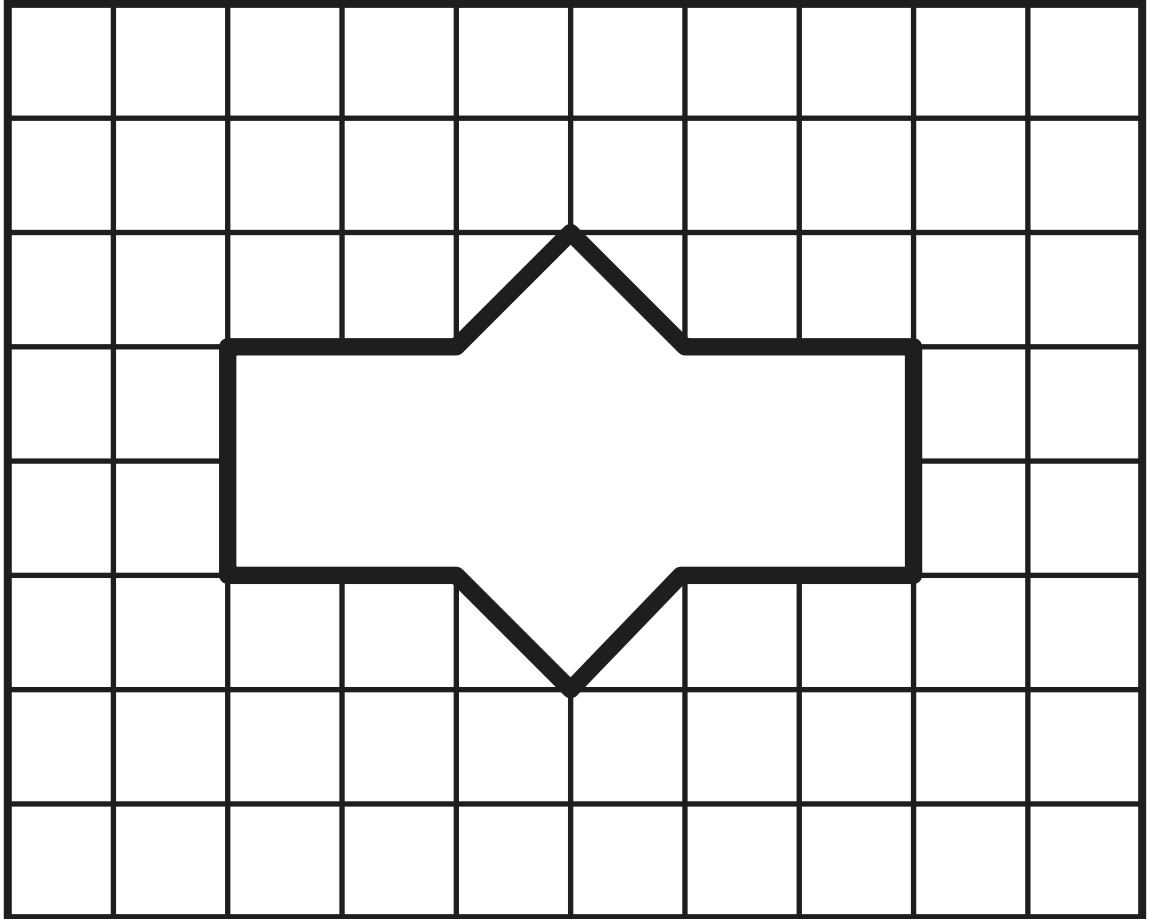
He divides it by **3**

The answer is **72**

What number was Ken thinking of?

_____

11. **Write the number that is one thousand more than 19 039**

_____

Write the number that is one hundred less than 19 039

_____

12. You have a cut-out shape for this question.

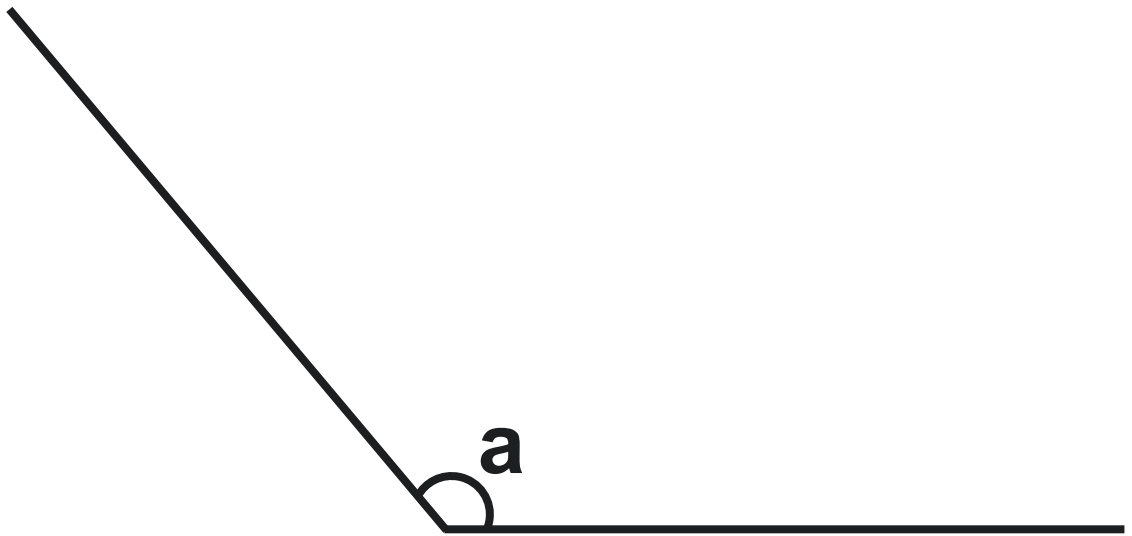Look at the shape on the grid below.

Draw all the lines of symmetry on this shape.

Use a ruler.

13. $\dfrac{1}{5}$ **of a number is 22**

What is the number?

_____

14. **Look at the angle below.**

Measure angle a

a is _____ °

15. **Look at the four fractions below.**

| $\dfrac{1}{3}$ | $\dfrac{1}{6}$ | $\dfrac{1}{4}$ | $\dfrac{1}{2}$ |

Write the correct fractions in the four boxes on the number line below.

0

1
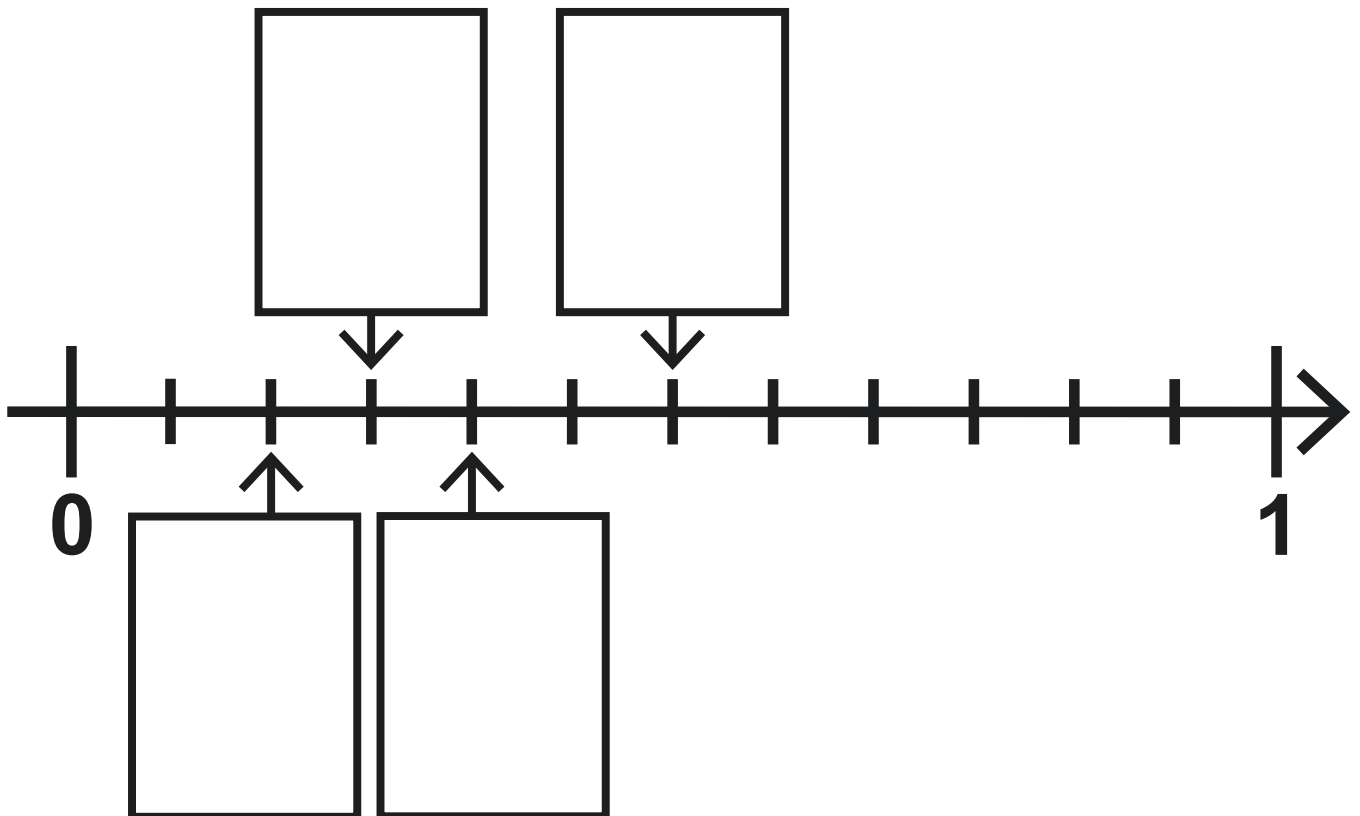
16. One day last year, the rate of rainfall from **6:30 am** until **9:00 am** was **2** millimetres per hour.

What was the total rainfall from **6:30 am** until **9:00 am?**

_____ **mm**

17. The manager of a flower shop orders **4** boxes of red roses.

There are **50** roses in each box.

The manager makes bunches with **6** roses in each bunch.

What is the greatest number of bunches that can be made?

Show your method.

_____

18. A cinema sells tickets at three different prices.

$\dfrac{1}{20}$ of the tickets are price **A**

$\dfrac{3}{5}$ of the tickets are price **B**

The rest of the tickets are price **C**

What fraction of the tickets are price C?

Show your method.

_____

19. Write the missing number to make this division correct.

$$15\ 000 \div \boxed{} = 75$$

20. Write the missing numbers to make these two multiplications correct.

(a) $\boxed{}\ 235 \times 3 = 9\ 705$

(b) $235 \times \boxed{}\ 0 = 11\ 750$

21. The height of the tallest person in history is **8** feet **11** inches.

One foot is **30** centimetres

One inch is **2·5** centimetres

Use this information to calculate the height of the tallest person, in centimetres.

Show your method.

_____ **cm**

22. **Look at the regular hexagon below.**
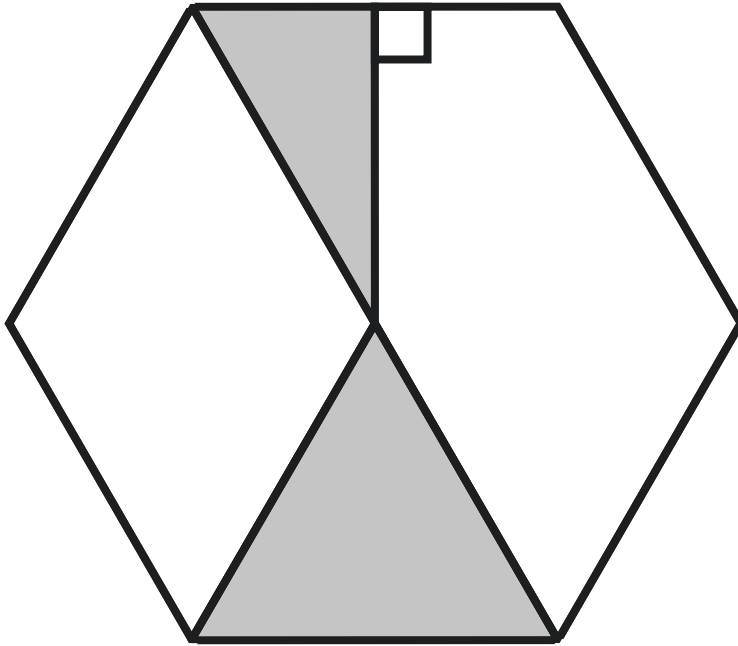
The area of the large shaded triangle is double the area of the small shaded triangle.

What fraction of the whole hexagon is the shaded area?

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23. A small box contains **650** grams of cereal.

A large box contains **20%** more cereal.

One portion of cereal is **40** grams.

How many full portions are in a large box?

Show your method.

_____ **portions**

24. **1 200** pupils were asked this question:

How important is it to have a break when using a screen?

The chart below shows the results.
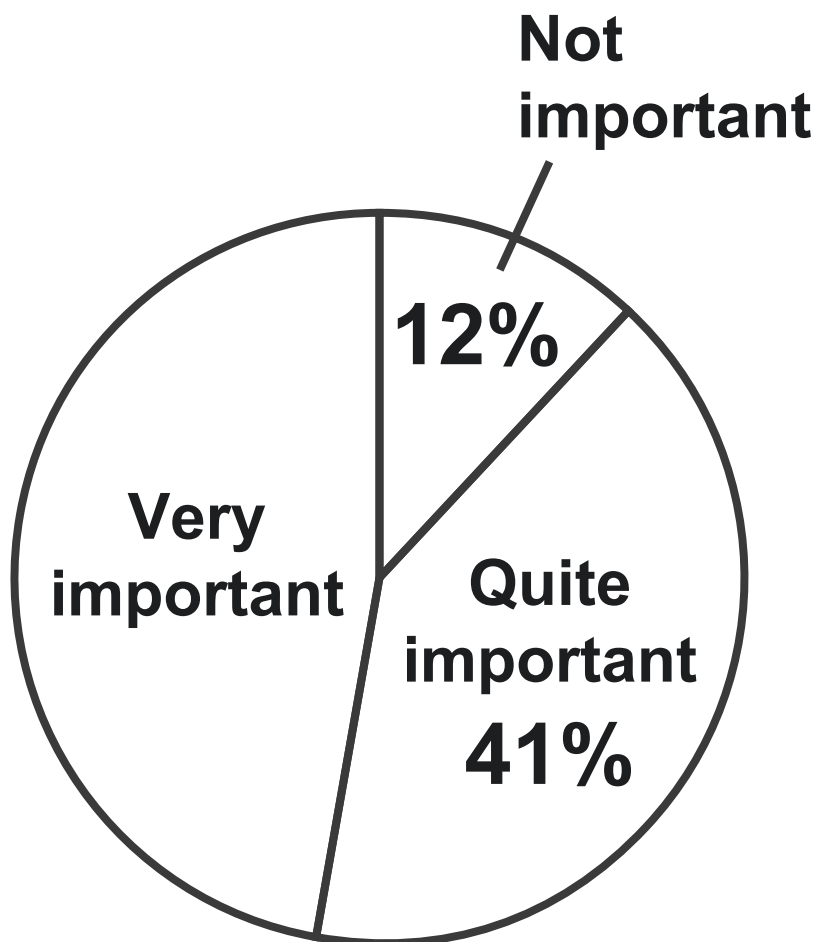
How many pupils answered 'Very important'?

_____ **pupils**

25. There are **25** sheets of paper in a small pack.

There are **500** sheets in a large pack.

(a)   How many small packs make one large pack?

_____

(b) The mass of the paper in the large pack is **2·4** kilograms.

What is the mass of **one sheet** of paper, in **grams?**

Show your method.

_____ **g**

26. The formula below is used to estimate the mass (in kilograms) of young children.

$$\text{mass} = 2 \times (\text{age in years} + 5)$$

(a)   Stefan's sister is **4** years of age.

Use the formula to estimate her mass.

_____ kg

(b) The mass of Megan's brother is **16** kilograms.

Use the formula to estimate his age.

_____ **years**

End of test

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