



**Fraction, Decimal, Percent.
Ratio**

Reasoning

Name: _____

Class: _____

Date: _____

Time:

Marks: **50 marks**

Comments:

Q1.

Tick the fractions **less than** $\frac{5}{8}$

$$\frac{1}{2} \quad \square$$

$$\frac{2}{8} \quad \square$$

$$\frac{3}{4} \quad \square$$

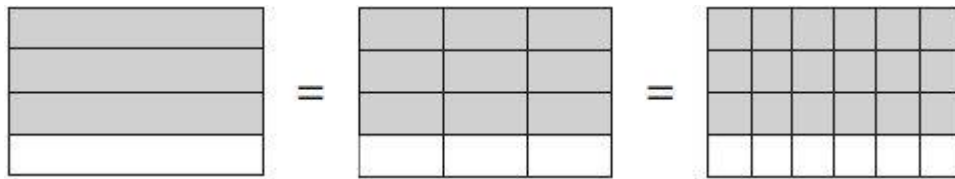
$$\frac{7}{16} \quad \square$$

$$\frac{24}{32} \quad \square$$

2 marks

Q2.

These diagrams show three equivalent fractions.



Write the missing values.

$$\frac{3}{4} = \frac{9}{\square} = \frac{\square}{24}$$

1 mark

Q3.

$$\frac{6}{5} \quad \frac{3}{5} \quad \frac{3}{4}$$

Write these fractions in order, starting with the **smallest**.

smallest

1 mark

Q4.

Amina asked 60 children to choose their favourite flavour of jelly.

These were her results.

Flavour	Number of children
Raspberry	12
Lemon	8
Orange	15
Blackcurrant	25
Total	60

What **percentage** of the 60 children chose orange?

1 mark

Q5.

Circle the improper fraction that is equivalent to $6\frac{7}{8}$

$$\frac{67}{8}$$

$$\frac{48}{8}$$

$$\frac{62}{8}$$

$$\frac{55}{8}$$

$$\frac{76}{8}$$

1 mark

Q6.

Tick the **two** numbers that are equivalent to $\frac{1}{4}$

Tick two.

0.25

0.75

$\frac{25}{100}$

0.5

$\frac{2}{5}$

1 mark

Q7.

Write these numbers in order of size, starting with the **smallest**.

1.9

0.96

1.253

0.328

smallest

1 mark

Q8.

A cat sleeps for **12 hours** each day.

50% of its life is spent asleep.



Write the missing percentage.

A koala sleeps for **18 hours** each day.

% of its life is spent asleep.



1 mark

Q9.

Jack has £400

He spends **35%** of his money on a new bike.



How much does Jack spend on his new bike?

£

1 mark

Q10.

Amina planted some seeds.

For every 3 seeds Amina planted, only 2 seeds grew.

Altogether, 12 seeds grew.

How many seeds did Amina **plant**?

1 mark

Q11.

Here are three symbols.

< > =

Write one symbol in each box to make the statements correct.

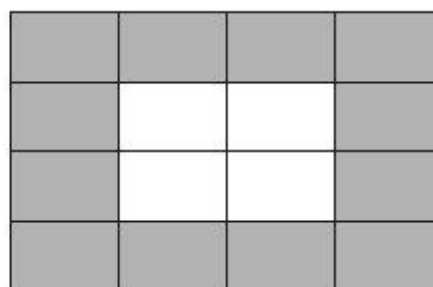
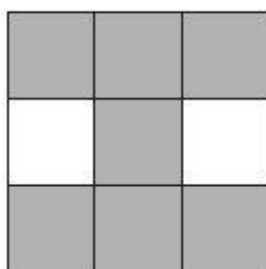
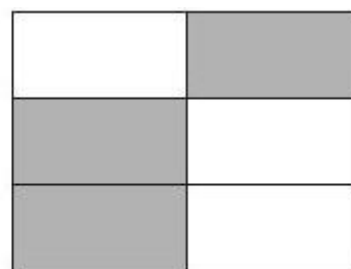
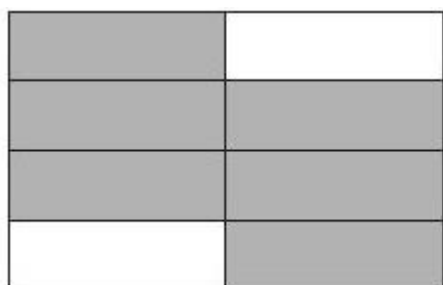
$$\frac{7}{10} \quad \boxed{\phantom{<}} \quad 0.07$$

$$\frac{23}{1000} \quad \boxed{\phantom{<}} \quad 0.23$$

1 mark

Q12.

Tick two shapes that have $\frac{3}{4}$ shaded.



1 mark

Q13.

This table shows the areas of the United Kingdom and Jamaica.

Country	Area (square kilometres)
United Kingdom	240,000
Jamaica	10,000

The area of the United Kingdom is larger than the area of Jamaica.

How many times larger is the United Kingdom?

times larger

1 mark

Q14.

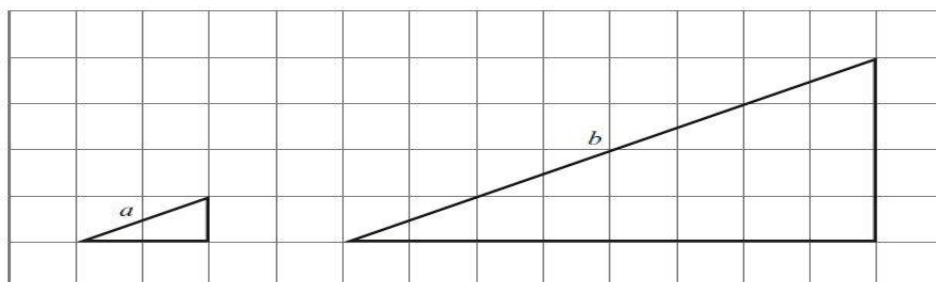
Write the two missing values to make these equivalent fractions correct.

$$\frac{\square}{3} = \frac{8}{12} = \frac{4}{\square}$$

2 marks

Q15.

Here are two similar right-angled triangles.



Write the ratio of side a to side b .

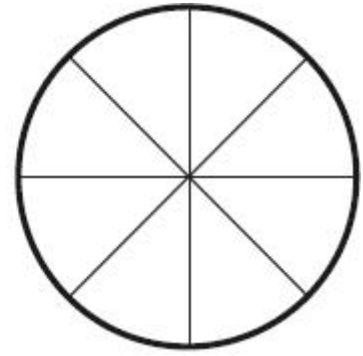
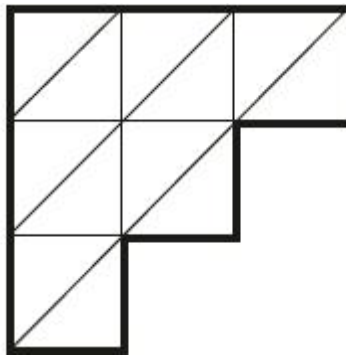
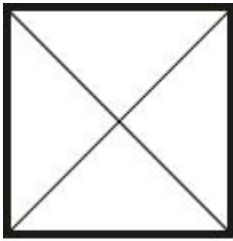
$$a : b = \square : \square$$

1 mark

Q16.

Each diagram below is divided into equal sections.

Shade three-quarters of each diagram.



2 marks

Q17.

In each box, circle the number that is **greater**.

$1\frac{1}{2}$	1.2
----------------	-----

$1\frac{1}{4}$	1.3
----------------	-----

$1\frac{5}{100}$	1.4
------------------	-----

$1\frac{3}{5}$	1.5
----------------	-----

2 marks

Q18.

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

1.25 kg

0.99 kg

1.025 kg

0.009 kg

kg

kg

kg

kg

lightest

Q19.

Tick the fractions that are **equal** to 20%.

$$\frac{1}{20} \quad \square$$

$$\frac{20}{40} \quad \square$$

$$\frac{1}{5} \quad \square$$

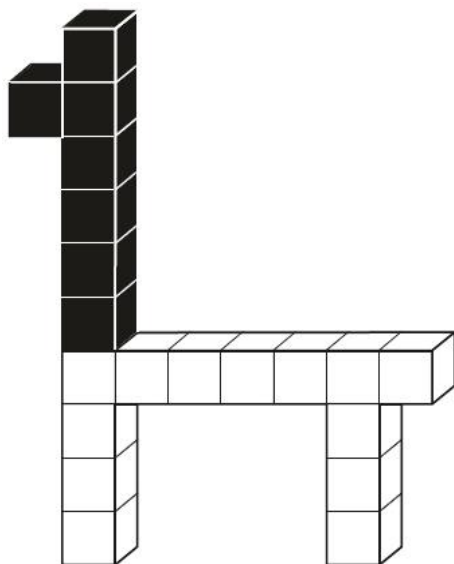
$$\frac{3}{15} \quad \square$$

$$\frac{2}{100} \quad \square$$

2 marks

Q20.

This model is made with 20 cubes.



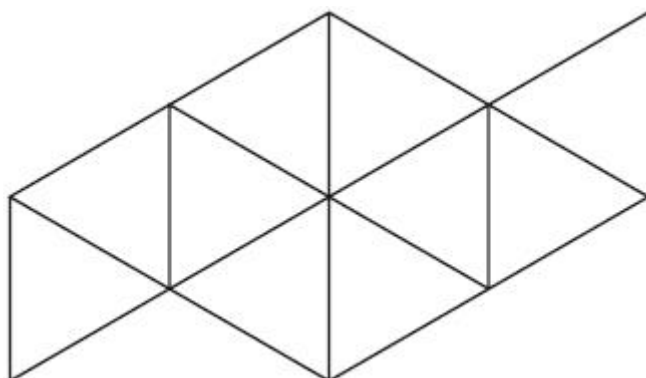
What **percentage** of the cubes in the model is black?

%

1 mark

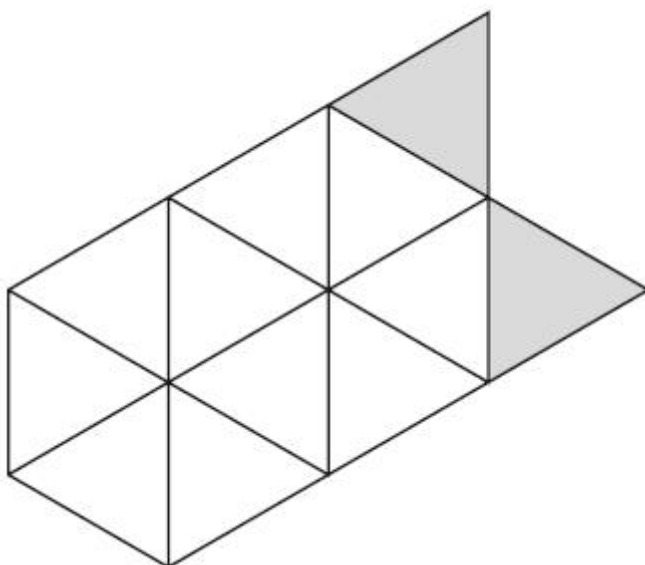
Q21.

Shade $\frac{1}{5}$ of this shape.



1 mark

Shade **more** triangles on this shape so that is $\frac{1}{3}$ shaded



1 mark

Q22.

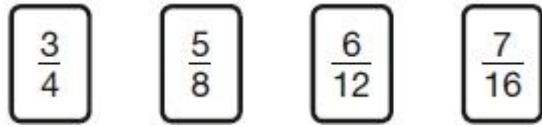
Write the missing fraction.

$$\frac{1}{3} + \frac{1}{4} + \boxed{} = 1$$

1 mark

Q23.

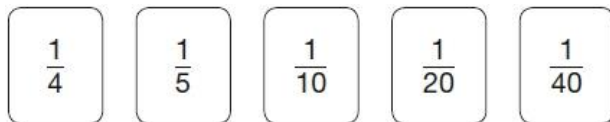
Here are four fraction cards.



Use any **three** of the cards to make this correct.



1 mark

Q24.

Use three of these fraction cards to complete the sum below.

$$\square + \square + \square = \frac{1}{2}$$

1 mark

Q25.

Look at this number.

23,451.96

Write the **digit** that is in the hundreds place.

1 mark

Write the **digit** that is in the hundredths place.

1 mark

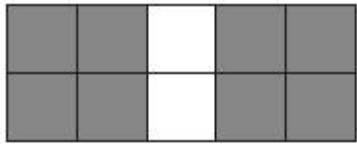
Q26.

Here are some shapes made of squares.

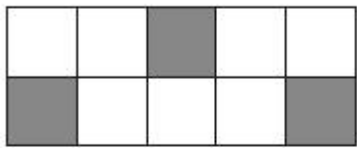
A fraction of each shape is shaded.

Match each shape to its equivalent fraction.

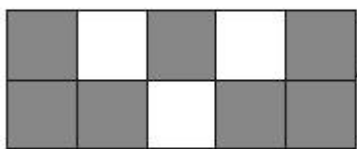
One has been done for you.



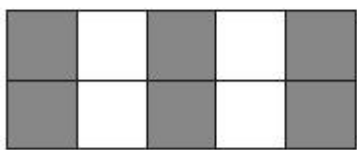
$$\frac{7}{10}$$



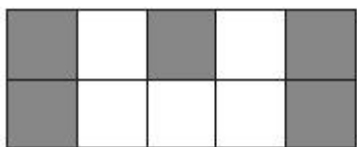
$$\frac{3}{5}$$



$$\frac{1}{2}$$



$$\frac{4}{5}$$

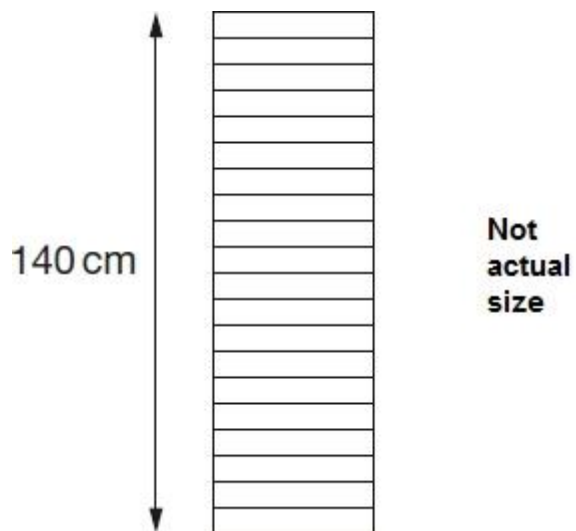


$$\frac{3}{10}$$

2 marks

Q27.

A stack of 20 identical boxes is 140 cm tall.



Stefan takes **three** boxes off the top.

How tall is the stack now?

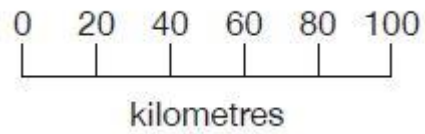
Show your method

cm

2 marks

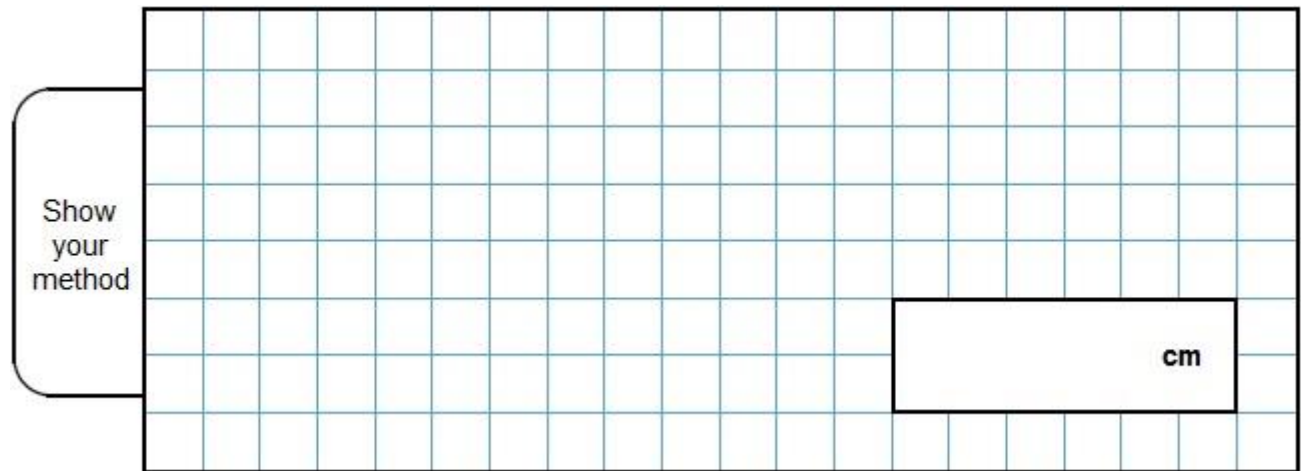
Q29.

On a map, 1 cm represents 20 km.



The distance between two cities is **250 km**.

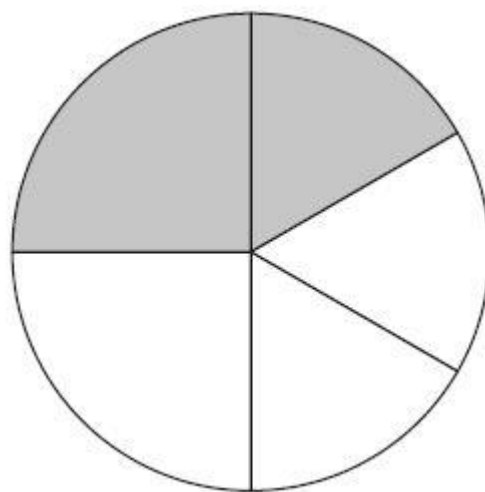
On the map, what is the distance between the two cities?



2 marks

Q30.

In this circle, $\frac{1}{4}$ and $\frac{1}{6}$ are shaded.



What fraction of the whole circle is **not** shaded?

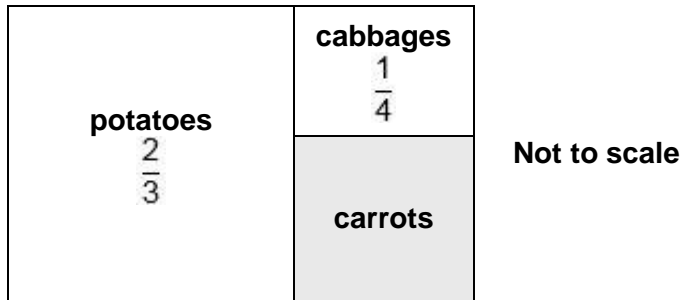
Show your method

2 marks

Q31.

This is a diagram of a vegetable garden.

It shows the fractions of the garden planted with potatoes and cabbages.



The remaining area is planted with carrots.

What **fraction** of the garden is planted with carrots?

Show your method

2 marks

Q32.

A book has 276 pages.

Amina has read $\frac{1}{3}$ of the book.

How many pages are **left** for Amina to read?

Show your method

pages

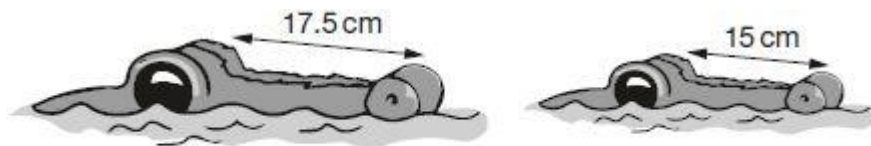
2 marks

Q33.

The length of an alligator can be estimated by:

- measuring the distance from its eyes to its nose
- then multiplying that distance by 12

What is the **difference** in the estimated lengths of these two alligators?



Not to scale

Show your method

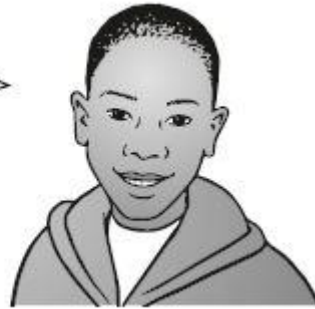
cm

2 marks

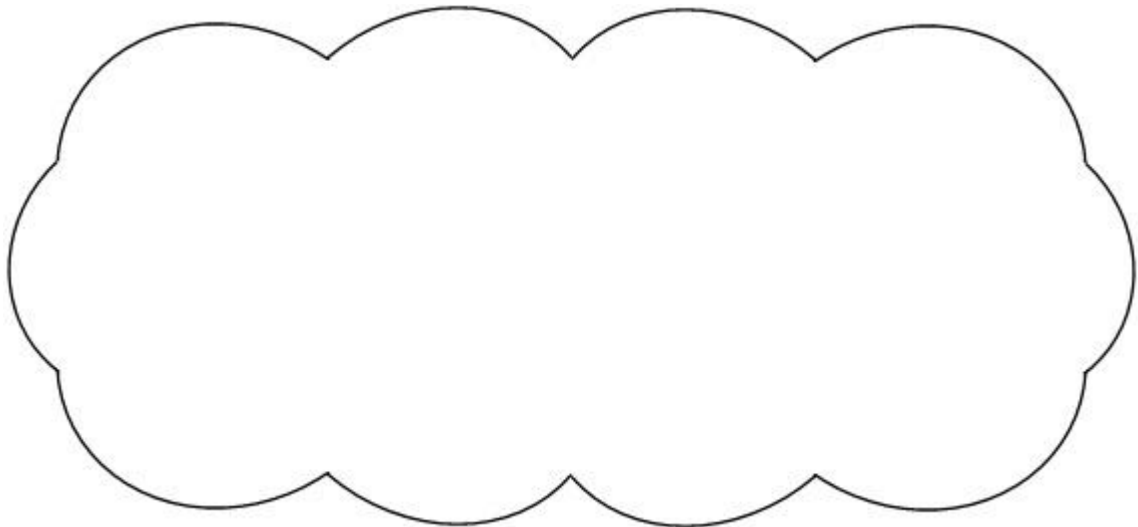
Q34.

Adam says,

0.25 is smaller than $\frac{2}{5}$

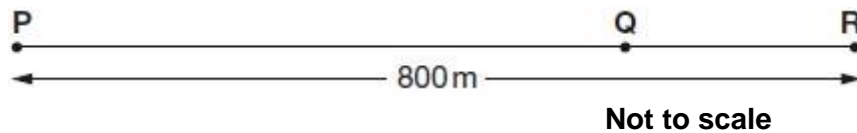


Explain why he is correct.



1 mark

Q35.



The distance from point **P** to point **R** is 800 metres.

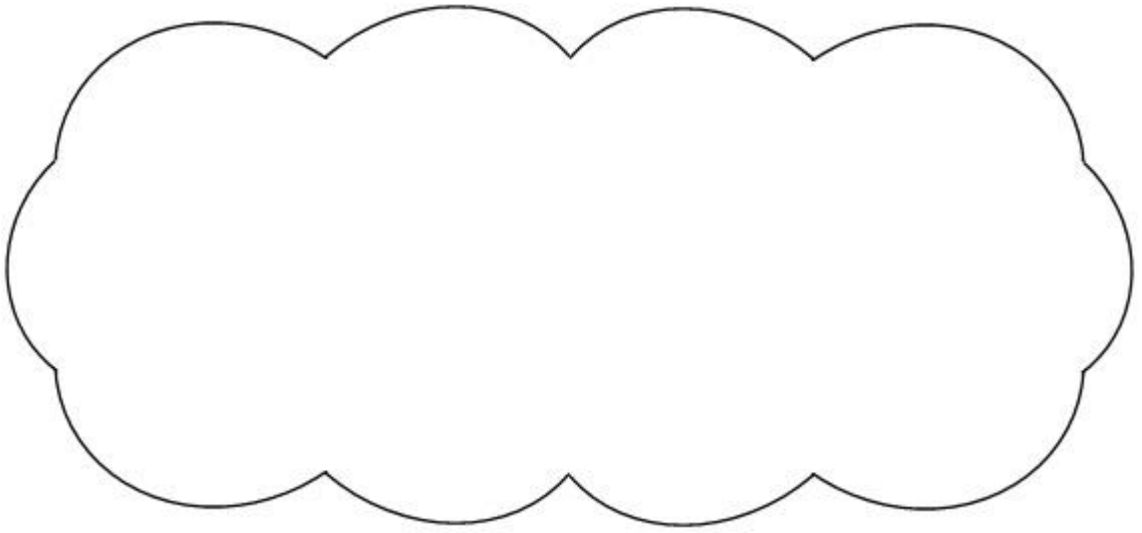
The distance from point **P** to point **Q** is **4 times** the distance from point **Q** to point **R**.

Olivia says,

It is 600 metres from point **P** to point **Q**.



Explain why Olivia is **not** correct.



1 mark