Herts for Learning

Herts for Learning is a not for profit company providing school improvement and business services. With over 500 shareholder schools, Herts for Learning is dedicated to improving standards of education in Hertfordshire and beyond.

Year 5 Mathematics Challenge

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The Four Rounds

Round 1   General Maths questions

Round 2   Memory Round

Break

Round 3   Estimation Round

Round 4   General Maths questions

60 marks for each round.

Preliminaries

- If your school has more than one team, decide on a 'Team A' and a 'Team B'.

- Make sure you write your team name on each Answer Sheet.

- Units are important! Correct answers with incorrect or missing units will not get full marks.

- 12 heats. Top team from each heat, plus other high-scoring teams, will go through to the Final on Friday 20th March.

Round 1

General Mathematics Questions

The missing digits are the same. What are they?

1☆4 x ☆2 = 4288

A **B** **C** **D**

3 4 5 6

These are the volumes of paint left in 3 containers. How much paint is there in total?

1.2 litres   **$2\frac{4}{5}$ litres**   **375 ml**

Joe is thinking of a whole number.

He **doubles** it and then **adds 28**.

He **divides** it by **6**.

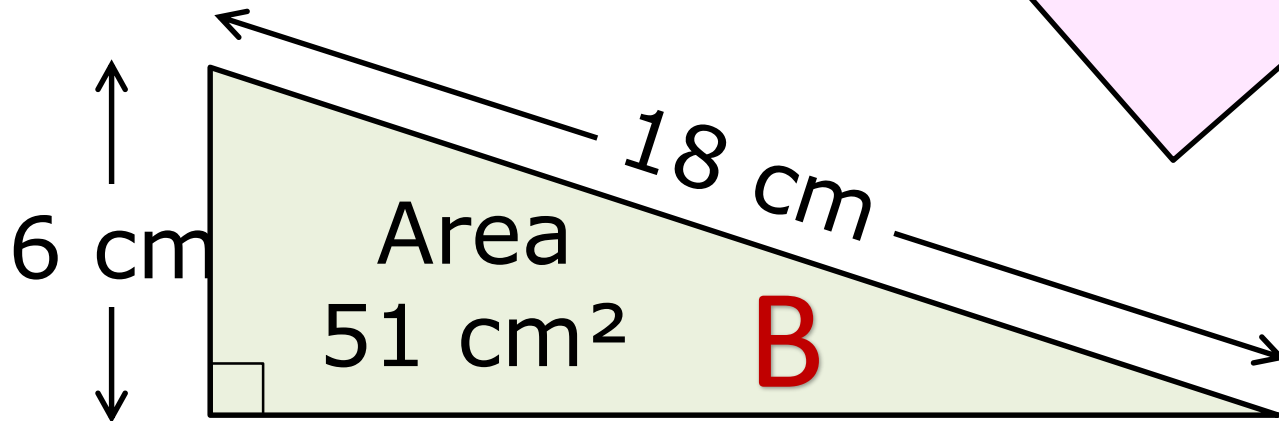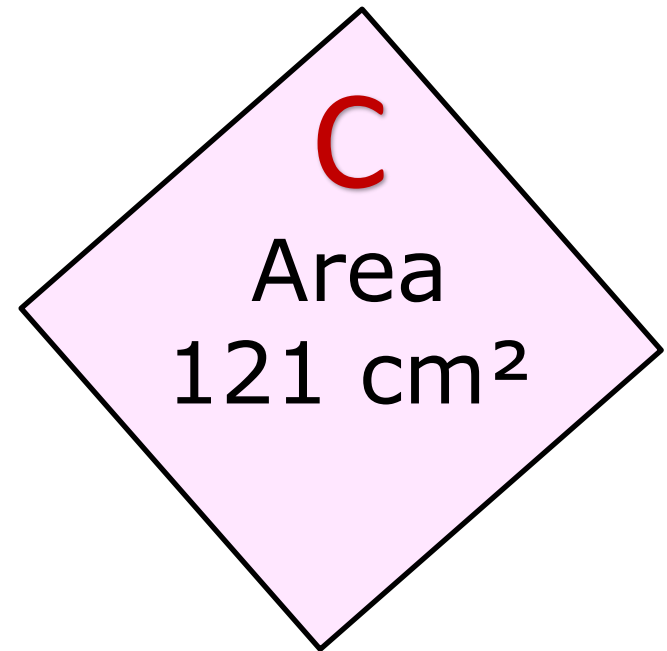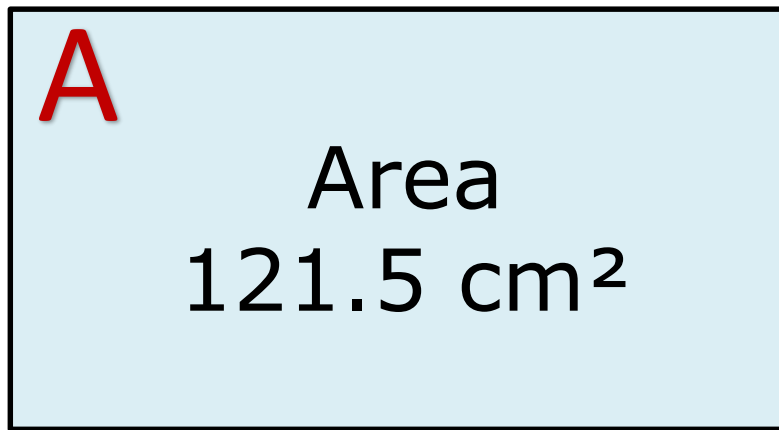**One-quarter** of this number is now **3**.

What was the number Joe **first** thought of?

Which shape has the longest **perimeter**?

A

Area
121.5 cm²

9 cm

C

Area
121 cm²

6 cm

Area
51 cm² **B**

18 cm

Put these in order, smallest answer first.

A $87 \div 3$

B $\frac{3}{10}$ of 90

C 2.8×9

D 26% of 120

Each row and column has a sum of **36**.

What is the value of ?

End of Round 1

Round 1
ANSWERS

The missing digits are the same. What are they?

1 ⭐4 × ⭐2 = 4288

A   **B**   **C**   **D**

3   4   5   6

Answer: 3

These are the volumes of paint left in 3 containers. How much paint is there in total?

1.2 litres $2\dfrac{4}{5}$ **litres**   **375 ml**

Answer: 4375 ml or 4.375 l

Joe is thinking of a whole number.

He **doubles** it and then **adds 28**.

He **divides** it by **6**.
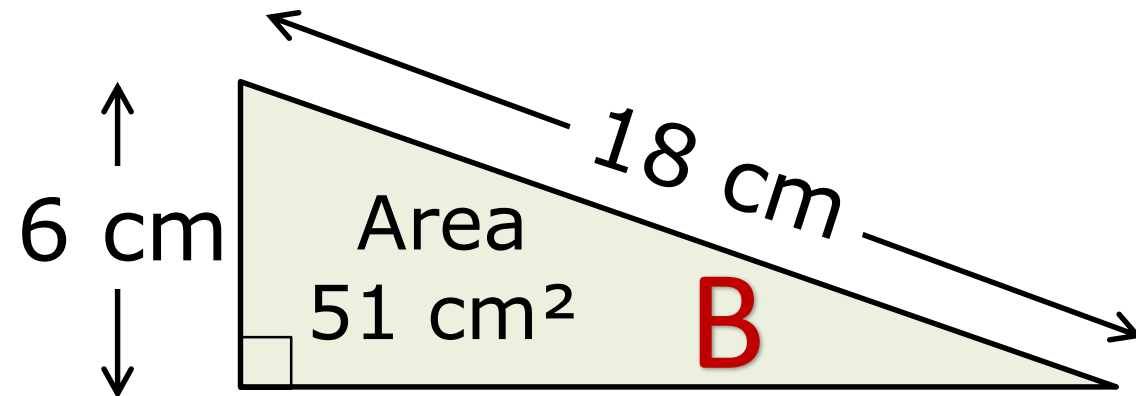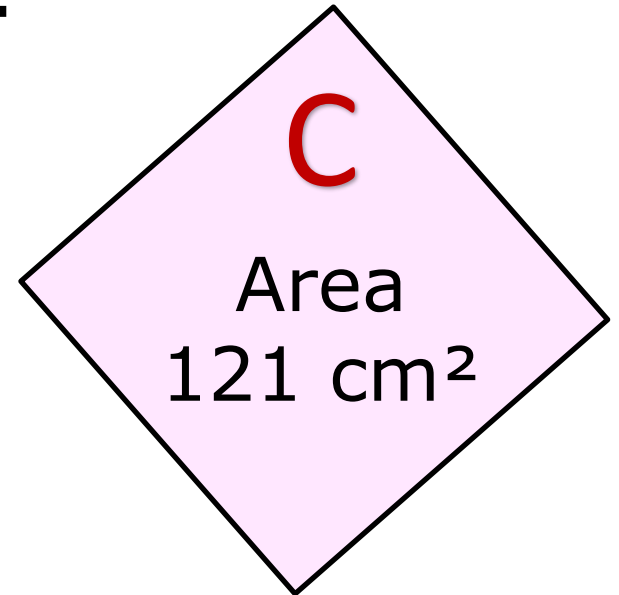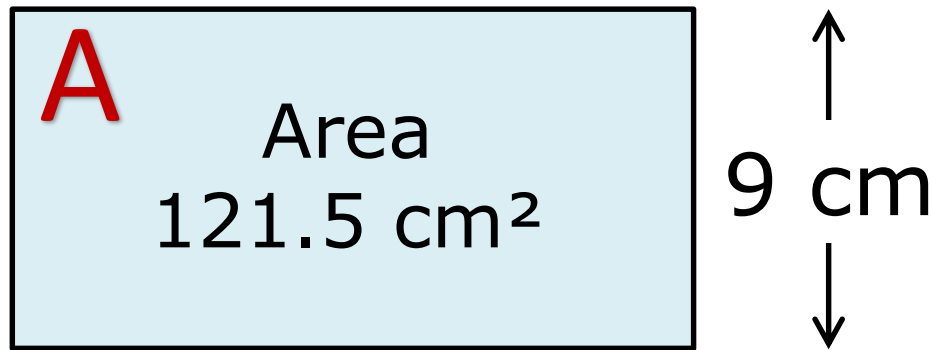
One-quarter of this number is now **3**.

What was the number Joe **first** thought of?

Answer: 22

Which shape has the longest **perimeter**?

A
Area
121.5 cm²

9 cm

C
Area
121 cm²

6 cm

Area
51 cm² B

18 cm

Answer: A

Put these in order, smallest answer first.

A $87 \div 3$

B $\frac{3}{10}$ of 90

C 2.8×9

D 26% of 120

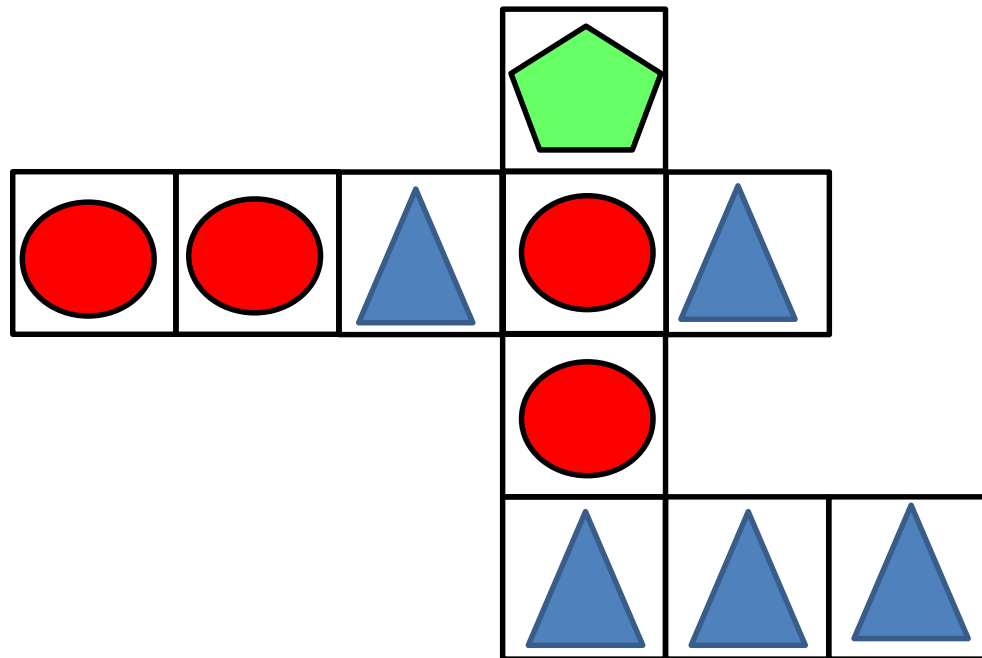**Answer: C B A D**

Each row and column has a sum of **36**.

What is the value of ?

Answer: 16

Round 2

Memory Round

Memory Round

We have a hidden mathematical poster.

Two members of your team (the **observers**) are allowed to come and look at the poster.

They must then go back and describe it for the other two people (the **scribes**) to draw.

The observers are not allowed to draw the poster, or make notes when they are looking at the poster.

When describing the poster, observers must use words only. They are not allowed to draw anything, or use their hands in any way.

Memory Round

The observers will have four chances to view the poster.

30 seconds to view

2 minutes to describe

30 seconds to view

2 minutes to describe

30 seconds to view

2 minutes to describe

30 seconds to view

2 minutes to describe

Scribes can draw at any time during the whole period.

After this, the team must hand their poster in immediately, with their team name on it.

Only ONE sheet must be handed in per team.

Memory Round

You now have one minute to:

- decide who will be the observers and who will be the scribes;

- find pencils, rubbers and anything else you might need;
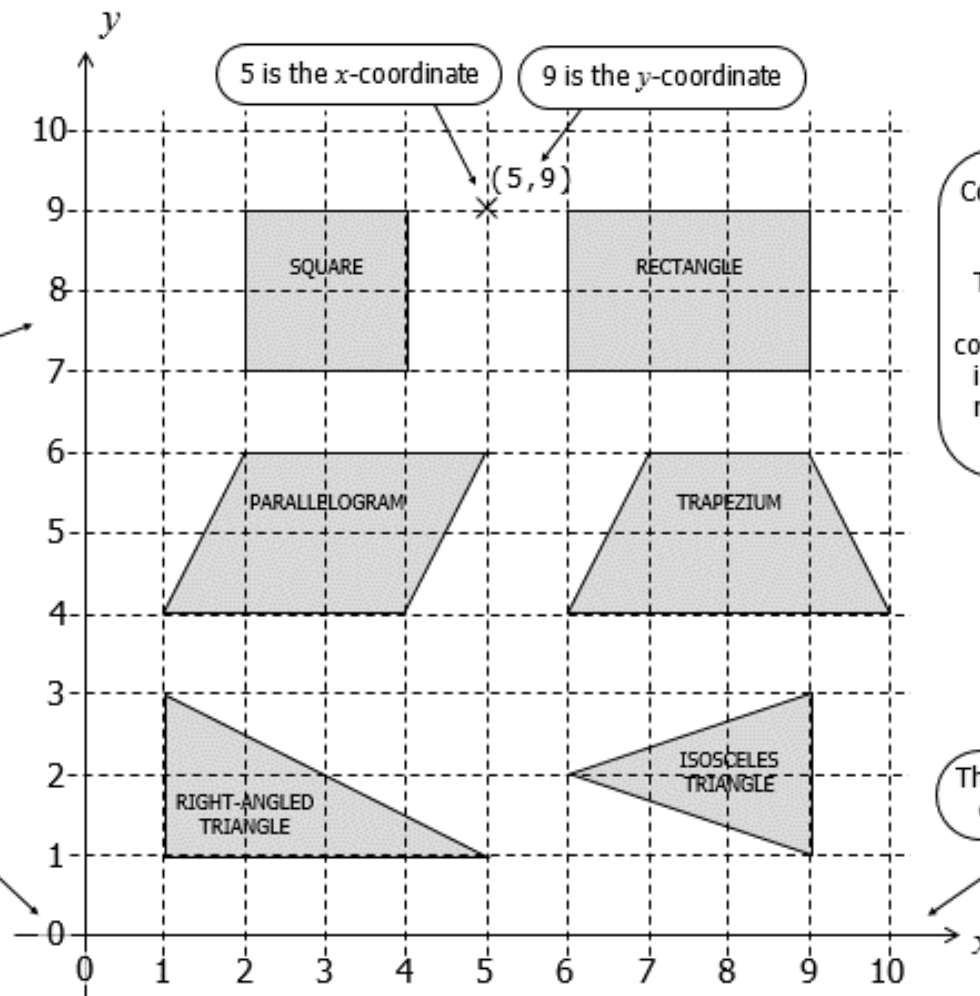
- decide on tactics!

Round 2

Memory Round

Round 2
ANSWER

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Memory Round

Round 3

Estimation Round

To the nearest whole centimetre, estimate the length of the piece of string.

Estimate the total monetary value of this cup if it was filled with 5p coins.

(Your answer should be an amount of money.)

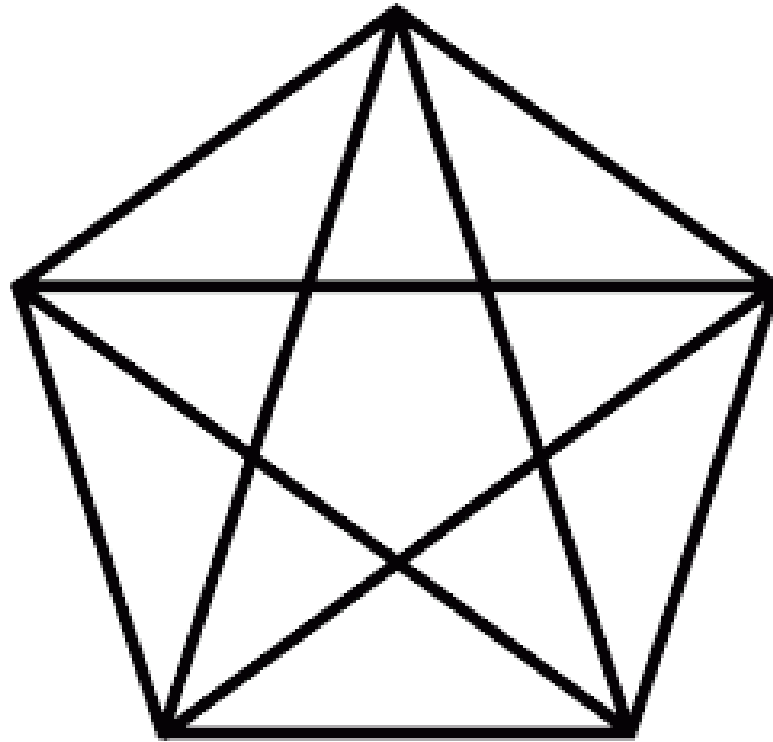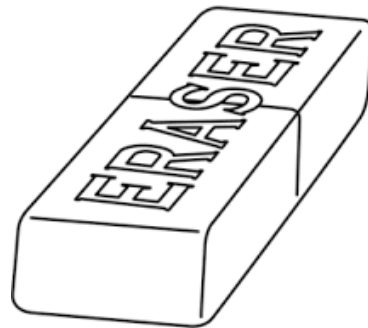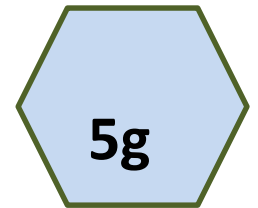Estimate the total number of split peas in this 30g bag.

How many triangles can you find?

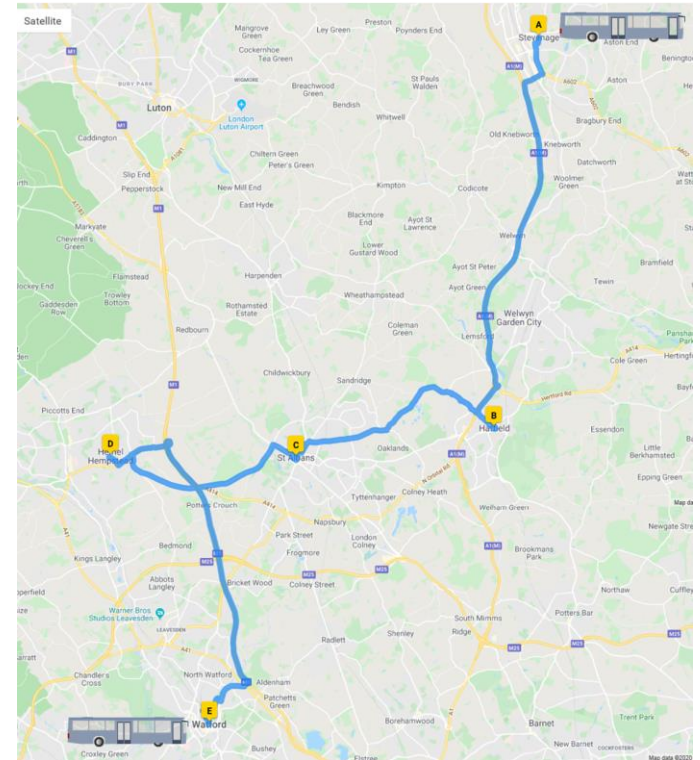# Estimate the **total** mass of these three items to the nearest gram?

10g

5g
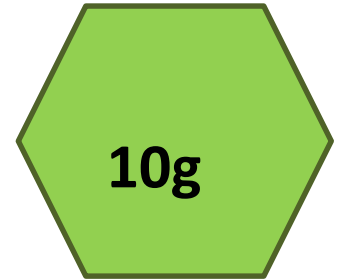
A bus departs from Stevenage.

It stops at Hatfield, St Albans and Hemel Hempstead, before arriving at Watford.

The map shows its route.

Use the scale to estimate the total distance the bus travels.

End of Round 3

Round 3
ANSWERS

To the nearest whole centimetre, estimate the length of the piece of string.

Answer: 136 cm

Estimate the <u>total monetary</u> value of this cup if it was filled with 5p coins.

Answer: £13.50

Estimate the
<u>total number</u> of
split peas in
this 30g bag.

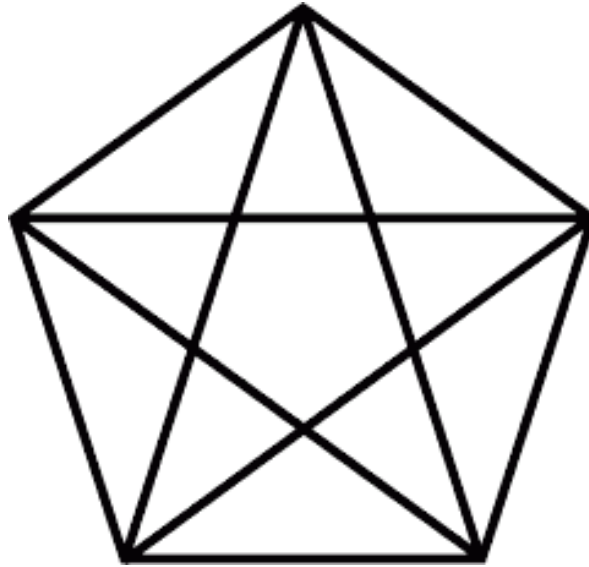
Answer: 250

How many triangles can you find?

Answer: 35

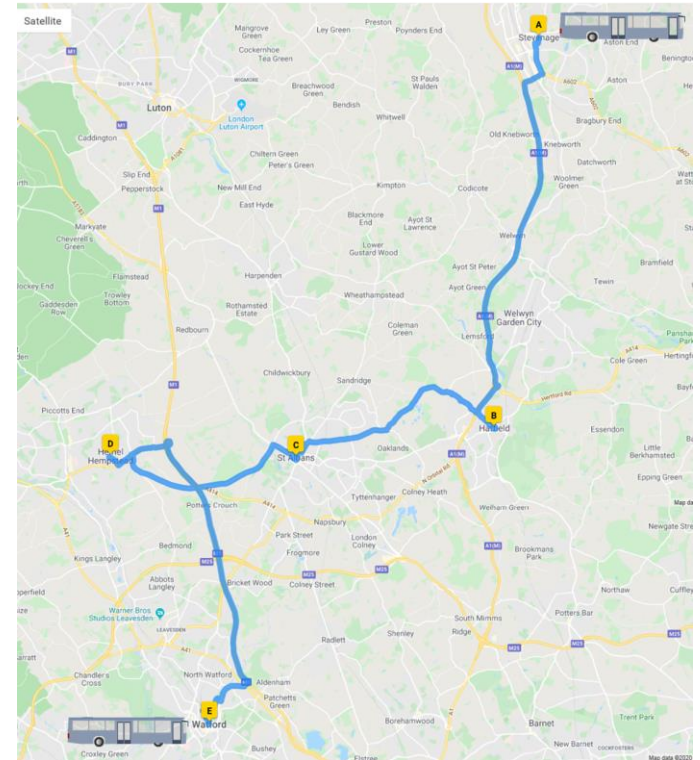Estimate the **total** mass of these three items to the nearest gram?
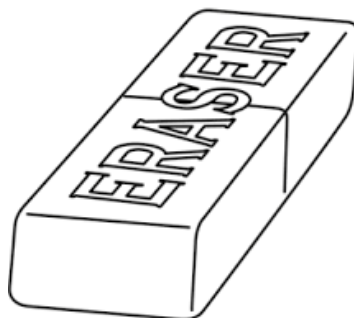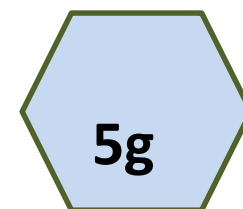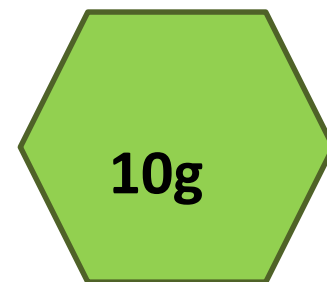
10g

5g

Answer: 55 g

A bus departs from Stevenage.

It stops at Hatfield, St Albans and Hemel Hempstead, before arriving at Watford.

The map shows its route.

Use the scale to estimate the total distance the bus travels.

Answer: 55 km

Round 4

General Mathematics Questions

Work out:

5% of 10% of 25% of 50% of 4,000

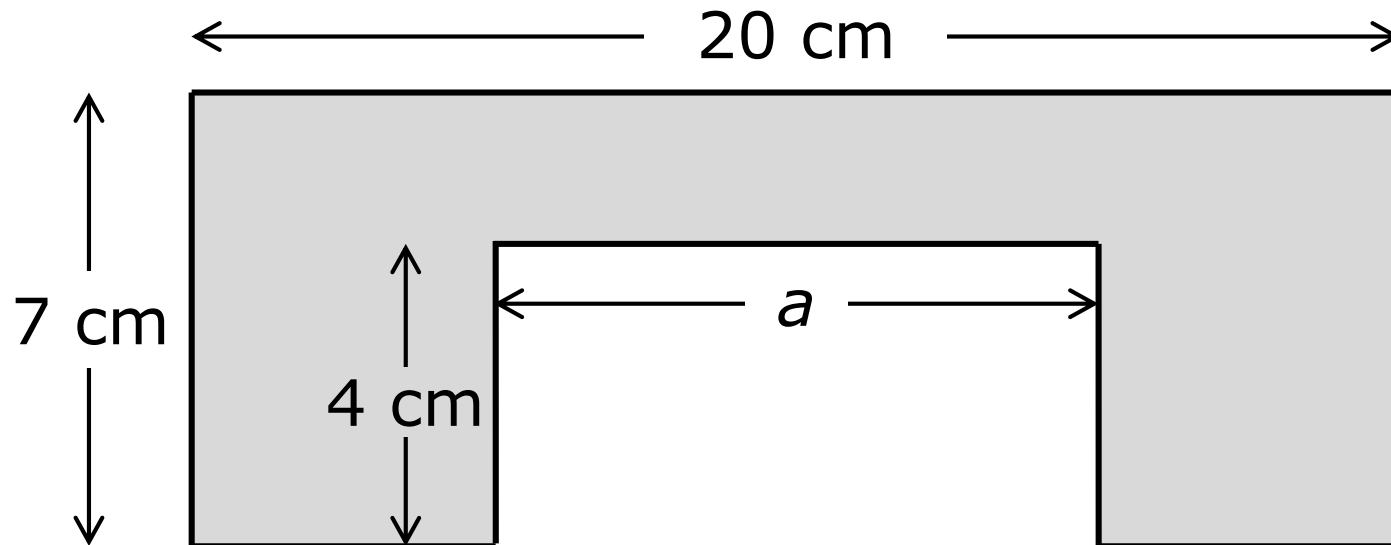# Write down **all** the common factors of

56 and 84

Example: 3 is a common factor of 12 and 18

The area of this shape is 90 cm².

(not drawn to scale)

Work out the length marked *a*.

I am thinking of a number with **two decimal places**.

- When I round it to the nearest whole number, I get **3**.

- When I round it to 1 decimal place, I get **3.5**.

What could my number be?

There is more than one possible answer, but you only need to write down one.

My cat eats $\dfrac{2}{3}$ of a tin of cat food every day.

I have 14 tins of cat food.

How long will they last?

Rohit's son is one-third of Rohit's age.

Rohit's mother is 25 years older than Rohit.

The total of their three ages is 130.

How old is Rohit?

End of Round 4

Round 4
ANSWERS

Work out:

5% of 10% of 25% of 50% of 4,000

Answer: 2.5

Write down **all** the common factors of

56 and 84

Answer: 1, 2, 4, 7, 14, 28

The area of this shape is 90 cm².

20 cm

7 cm

4 cm

a

(not drawn to scale)
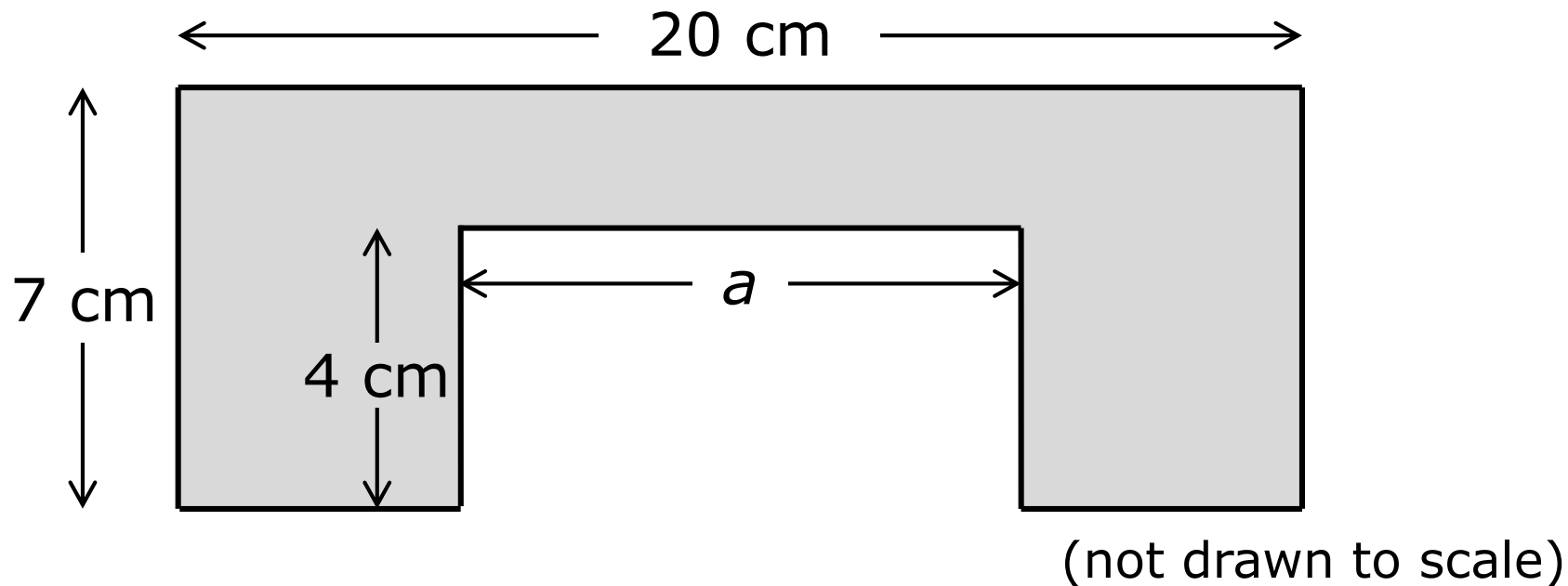
Work out the length marked *a*.

Answer: 12.5 cm

I am thinking of a number with **two decimal places**.

- When I round it to the nearest whole number, I get **3**.

- When I round it to 1 decimal place, I get **3.5**.

What could my number be?

Answer: any <u>one</u> of
3.45 3.46 3.47 3.48 3.49

My cat eats $\frac{2}{3}$ of a tin

of cat food every day.

I have 14 tins of cat food.

How long will they last?

Answer: 21 days (or 3 weeks)

Rohit's son is one-third of Rohit's age.

Rohit's mother is 25 years older than Rohit.

The total of their three ages is 130.

How old is Rohit?

Answer: 45

Well done to all

Year 5 Mathematics Challenge

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