Name:

Accuracy of Measurements

Additional Tasks

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Quiz 1

1) Evaluate 2^4	2) Write 40% as a decimal.	3) Complete the ratio: $\sin\theta$ $= \_\_\_\_\_$
4) The mean of 8, 2, 6, 8	5) Solve the equation $2x - 3 = 9$	6) Sketch a tetrahedron.
7) 25% of £50	8) Simplify $y^4 \times y^3$	9) Evaluate 6^0

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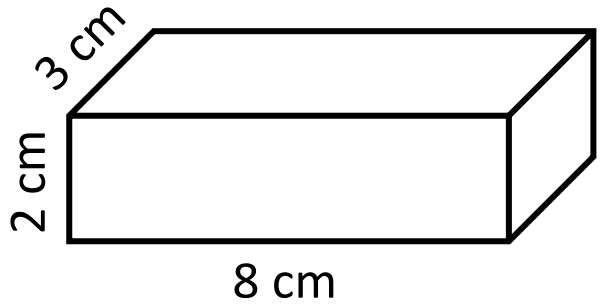
Example 1

What is the surface area of the cuboid?

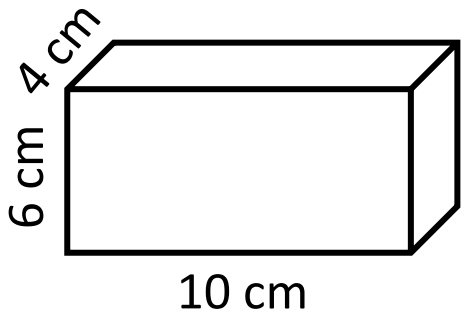


Front	8	x	2	=	1	6	
Back					1	6	
Left	2	x	3	=		6	
Right						6	
Top	8	x	3	=	2	4	
Bottom					2	4	
Total					9	2	cm^2

3

Exercise 1

What is the surface area of the cuboid?



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Quiz 2

1) Round off 7,280 to the nearest 100.	2) Round off 43.283 to 2 decimal places.	3) Round off 735 to one significant figure.
4) Round off 7,386 to the nearest 10.	5) Round off 98.45 to one decimal place.	6) Round off 8,478 to two significant figures.
7) Round off 87.28 to the nearest unit.	8) Round off 835,928.4 to the nearest 1,000.	9) Round off 8.39 to the nearest 100.

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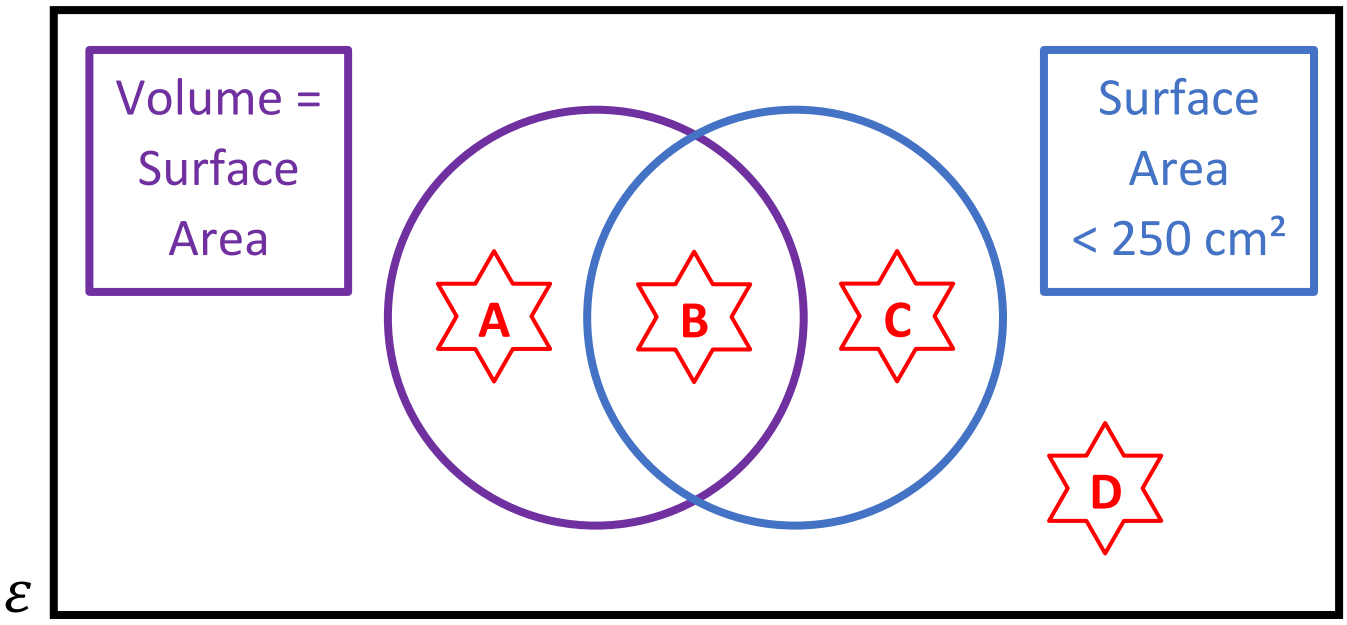
Venn Diagram Challenge 1



Think of measurements for a cuboid that could fit into each region. If you think a region is impossible to fill, explain why!

A

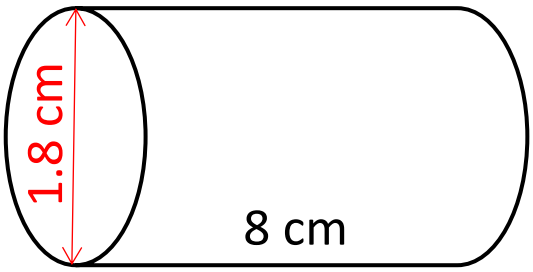
B

C

D

Example 2

Calculate the volume of the cylinder.



Diameter = 1.8cm

Radius = 1.8 ÷ 2

= 0.9 cm

Volume of the cylinder = $\pi \times \text{radius}^2 \times \text{length}$

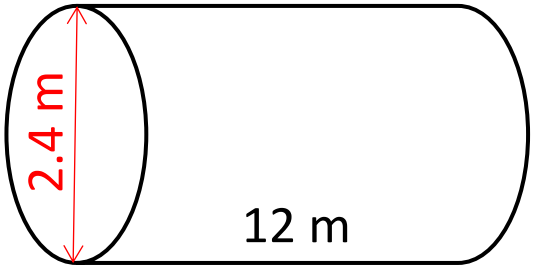
$= \pi \times 0.9^2 \times 8$

$= 20.35752054\ldots$

$= 20.36\ \text{cm}^3$ to 2 d.p.

Exercise 2

Calculate the volume of the cylinder.



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Quiz 3

In the following formulae, a, b and c represent lengths. Decide whether each formula represents a length; an area; a volume; or none of these.

1) $M = a + c$	2) $M = 3ab$	3) $M = abc$
4) $M = 2\pi a + bc$	5) $M = \frac{ab}{c}$	6) $M = a^2 + b^2$
7) $M = 3bc - a^3$	8) $M = b(a + c)$	9) $M = 4bc^2$

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The Photograph

Ceinwen enlarges a photograph in a local shop.

3 cm

4 cm

Original Photograph

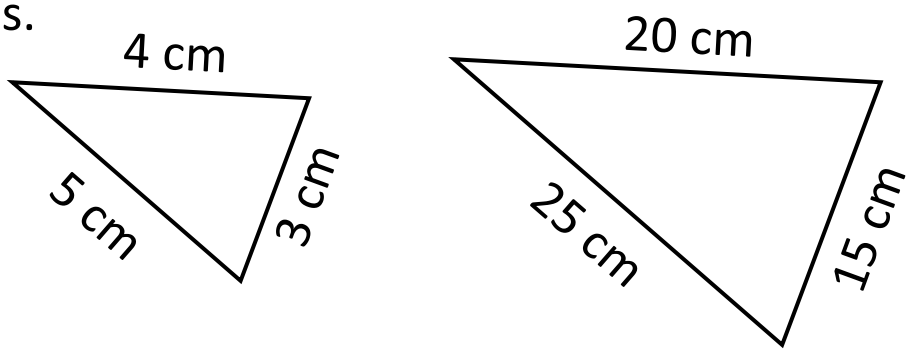
15 cm

New Photograph (not to scale)

What can you find from this information?

Example 3

Prove whether the following triangles are similar triangles.



Dividing corresponding edges:

$20 \div 4 = 5$

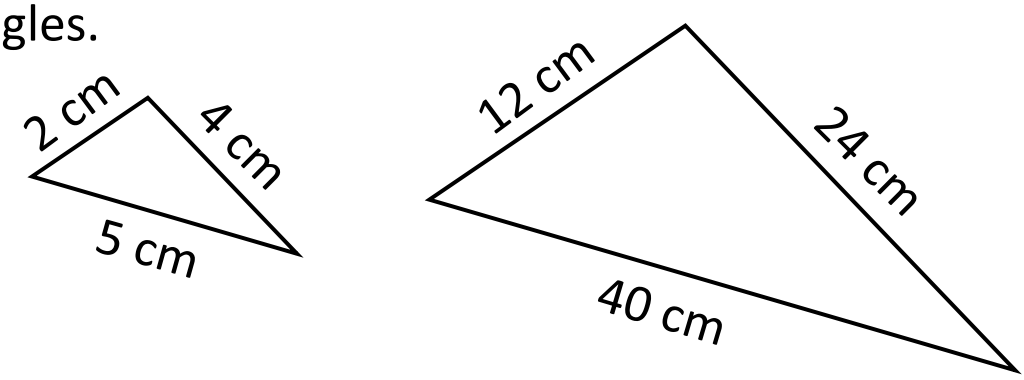
$25 \div 5 = 5$

$15 \div 3 = 5$

The corresponding edges are in the same ratio so the triangles are similar triangles.

Exercise 3

Prove whether the following triangles are similar triangles.



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Quiz 4

1) What is the lower bound of the measurement 34 cm, measured to the nearest cm?	2) What is the upper bound of the measurement 35 m, measured to the nearest 5 m?	3) What is the lower bound of the measurement 700 ml, measured to the nearest 100 ml?
4) Simplify $\frac{x^8}{x^2}$	5) How many days are in November?	6) Sketch a sphere.
7) Write $\frac{2}{5}$ as a decimal.	8) $3 + 4 \times 5$	9) Which is longer: 2 inches or 4 cm?

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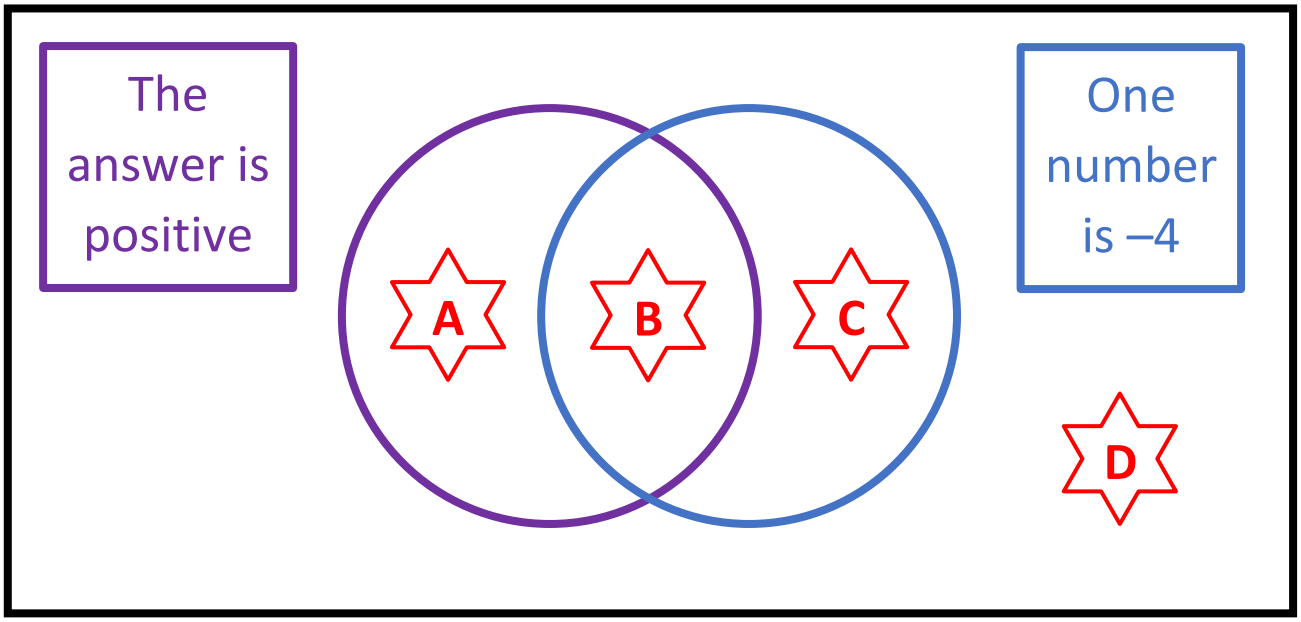
Venn Diagram Challenge 2



Write down a subtraction sum (using two numbers) that could fit into each region. If you think a region is impossible to fill, explain why!

A

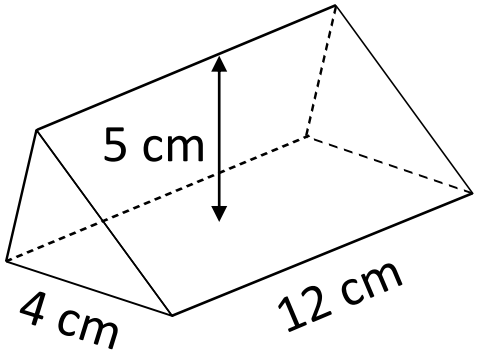
B

C

D

Example 4

Calculate the volume of the triangular prism.



Area of the cross-section

$= \frac{\text{base} \times \text{height}}{2} = \frac{4 \times 5}{2}$

$= \frac{20}{2}$

$= 10\ cm^2$

Volume of the prism

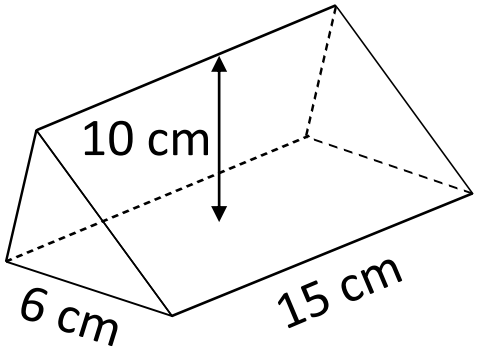
= Area of cross-section × length

= 10 × 12

$= 120\ cm^3$

Exercise 4

Calculate the volume of the triangular prism.



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Quiz 5

1) $10 + -4$	2) $10 - -4$	3) 10×-4
4) $10 \div -4$	5) Write 42% as a decimal.	6) Write 42% as a fraction, in its simplest form.
7) Evaluate π^0	8) Evaluate 7^3	9) Evaluate $1^2 + 2^2 \times 3^2$

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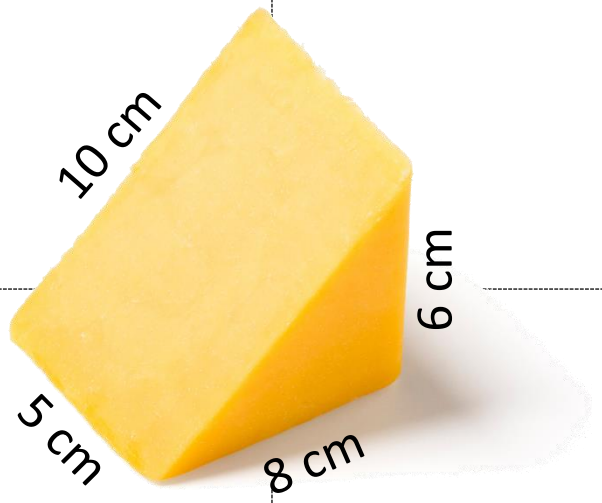
The Piece of Cheese

1) Calculate the area of the triangle that is the cheese's cross-section.

2) Calculate the volume of the piece of cheese.



3) Calculate the surface area of the piece of cheese.

4) If the cheese's mass is 150 g, what is its density?

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Evaluating the Workbook

Notes