

Worked Examples

Perimeter, Area and Volume

Year 6

Instructions

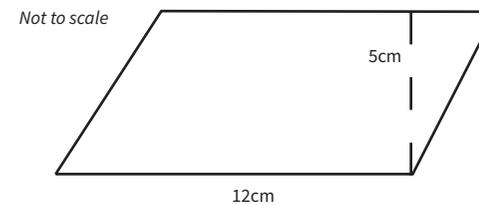
A pupil has been given a set of questions to answer. They tried their best but think they have got some answers wrong.

Go through the work and check the answers. Help the pupil to understand their errors by explaining where they have gone wrong or how to find the correct answer (there are prompts below the questions to help you).

Note that you will not always be asked to provide the correct answer.

1

Calculate the area of the parallelogram.

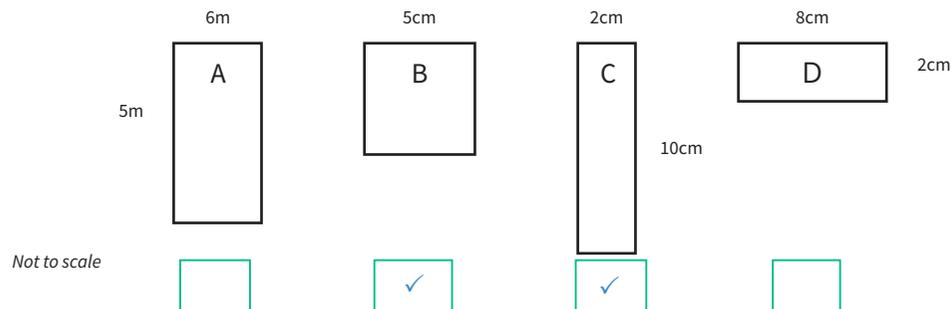


30cm²

This answer is: Correct Incorrect

Explain how to calculate the area of a parallelogram.

2 Tick the shapes with the same perimeter.



This answers are: Correct Incorrect

If incorrect, what should the answers be?

3 A cuboid has a length of 5cm, width of 7cm and height of 2cm. Calculate the volume of the cuboid.

$l \times w \times h = \text{volume}$
 $5\text{cm} \times 7\text{cm} \times 2\text{cm}$

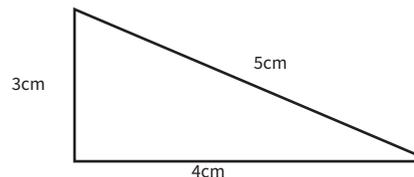
$5\text{cm} \times 2\text{cm} = 10\text{cm}$
 $10\text{cm} \times 7\text{cm} = 70\text{cm}^2$

70cm²

This answer is: Correct Incorrect

If incorrect, explain the error.

4 Find the area of the triangle.



7.5cm²

This answer is: Correct Incorrect

If incorrect, explain the error.

5 A cube has a length of 5cm. What is the volume of the cube?

25cm³

This answer is: Correct Incorrect

If incorrect, what should the answer be?

Answers

Q no.	Question	Correct/ Incorrect	Error/ Additional Guidance
1	Calculate the area of the parallelogram. 30cm ²	Incorrect	The pupil has not used both the given measurements to calculate the area, instead they have taken the 12cm and roughly measured one side of the parallelogram. They have then applied their knowledge of finding the area of quadrilaterals to this question instead of using the formula to find the area of a parallelogram (base x perpendicular height). Correct answer - 60cm ²
2	Tick the shapes with the same perimeter. B and C	Incorrect	The pupil has identified that the perimeter of B is 20cm. The pupil has then found the area of C is 20cm ² and mistakenly identified these two as having the same perimeter. The perimeter is the sum of all the sides of a 2D shape. The area is the amount of space occupied by a 2D shape. Correct answer - B and D
3	A cuboid has a length of 5cm, width of 7cm and height of 2cm. Calculate the volume of the cuboid. 70cm ²	Incorrect	The error here is very small but important. The pupil has answered the question with 70cm ² . When finding the area of a 2D shape, this is measured in the unit of measure ² as this measures how many square units the 2D shape occupies. Volume is measured in the unit of measure ³ . This is because it measures how many cubed units a 3D shape occupies. Correct answer - 70cm ³
4	Find the area of the triangle. 7.5cm ²	Incorrect	The pupil has used the incorrect measures to calculate the area of the triangle. They have used the height and the hypotenuse and then divided by two. Area of a triangle = (base x height) ÷ 2 Correct answer = 6cm ²
5	A cube has a length of 5cm. What is the volume of the cube? 25cm ³	Incorrect	The pupil has multiplied only the length and either height or width, not all three. This could show that the pupil does not understand how to calculate the volume of a shape. Alternatively, this could indicate that the pupil does not know the properties of a cube. Correct answer - 125cm ³