

Prisms: Surface Area, Volume and Composite Figures

Grade 7 math · Test · Standards: 7.G.B.6

Name: _____ Date: _____ Class: _____

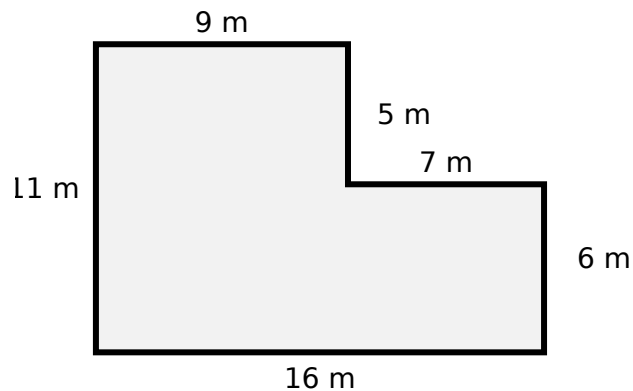
This test has 8 questions worth 20 points on composite area, volume and surface area of prisms. Allow 45 minutes, write units in every answer and show each step. A calculator is not needed.

Standards: 7.G.B.6 · **Level:** Grade 7

Time: 45 minutes · 8 questions · Total: 20 points · Calculator: as allowed by your teacher

Question 1 Area with a notch (2 points)

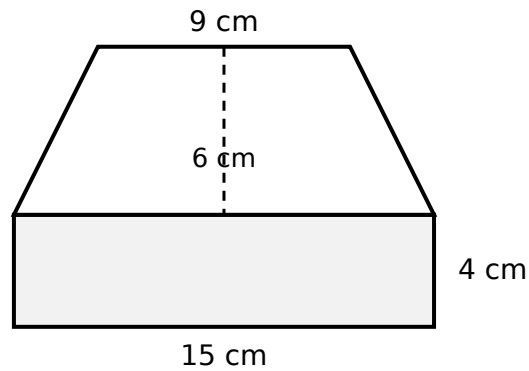
The floor plan shows an L-shaped room. Calculate its area.



L-shaped floor plan.

Question 2 Trapezoid on a rectangle (3 points)

The figure is a trapezoid sitting on a rectangle.



Trapezoid on a rectangle.

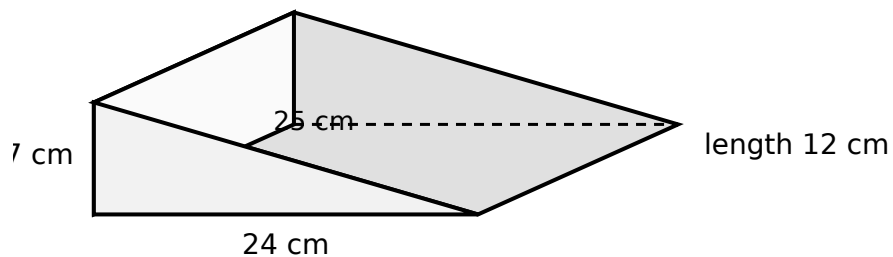
- Find the area of the trapezoid. (1 point)
- Find the area of the rectangle. (1 point)
- Find the area of the whole figure. (1 point)

Question 3 Box measurements (2 points)

A box measures 14 in by 6 in by 5.5 in. Calculate (a) its volume and (b) its surface area. (1 point each)

Question 4 Right triangular prism (3 points)

The base of the prism is a right triangle.

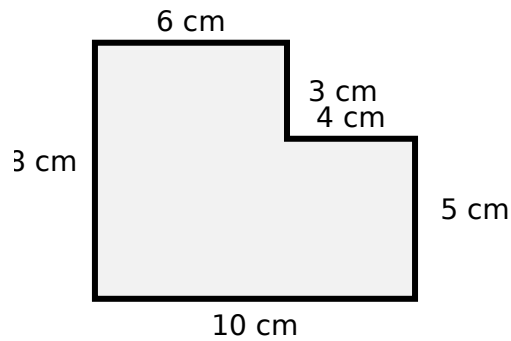


Triangular prism.

- Find the area of the triangular base. (1 point)
- Find the volume. (1 point)
- Find the surface area. (1 point)

Question 5 L-shaped prism (3 points)

The L-shaped figure is the base of a prism that is 5 cm tall.



Base of the prism; prism height 5 cm.

- Find the area of the L-shaped base. (2 points)
- Find the volume of the prism. (1 point)

Question 6 Find a missing length (2 points)

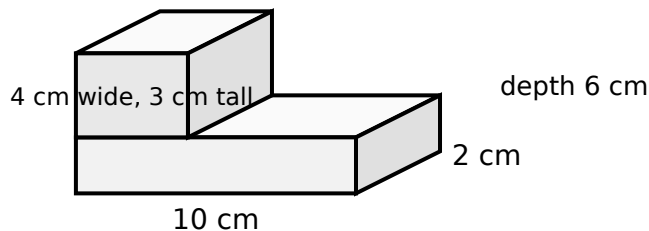
A triangular prism has a volume of 270 cm^3 . Its triangular base has a base of 9 cm and a height of 6 cm. Find the length of the prism.

Question 7 Open fish tank (3 points)

An open-top fish tank is 30 in long, 12 in wide and 16 in tall. (a) How many square inches of glass are needed for the bottom and four sides? (2 points) (b) What is the volume of water when the tank is filled to a depth of 12 in? (1 point)

Question 8 Stacked blocks (2 points)

A solid is made of two rectangular blocks.



Two blocks, both 6 cm deep.

Find the volume of the whole solid. (2 points)