Lesson 10 Assessment
Solving Problems Involving Composite 3-D Objects
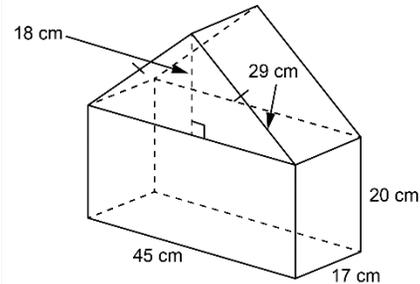
Solving Problems Involving Composite 3-D Objects

Decomposes a composite object into known objects	Applies decomposition to determine the volume of a composite object	Applies decomposition to determine the surface area of a composite object	Solves problems involving surface area or volume of composite objects

The house (without the chimney) is made up of a rectangular prism and a triangular prism.
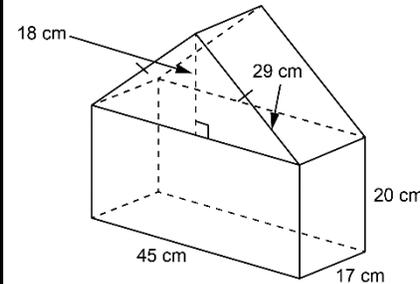

Volume of rectangular prism:
45 × 17 × 20 = 15 300

Volume of triangular prism:
(45 × 18 ÷ 2) × 17 = 6885

Volume of composite object:
  15 300 cm^3 + 6885 cm^3
= 22 185 cm^3
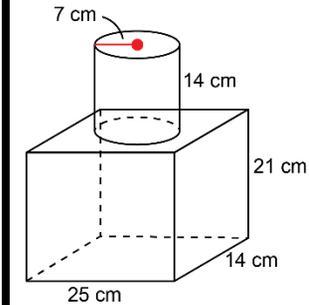

Surface area of rectangular prism:
  45 × 17 + 2(45 × 20) + 2(17 × 20)
= 3245

Surface area of triangular prism:
2(45 × 18 ÷ 2) + 2(29 × 17) = 1796

Surface area of composite object:
3245 cm^2 + 1796 cm^2 = 5041 cm^2

A pastry chef is creating a cake in the shape of a cylinder on top of a rectangular prism. What is the volume of the cake?

Volume of rectangular prism:
25 × 14 × 21 = 7350

Volume of cylinder:
(π × 7 × 7) × 14 ≈ 2154.04

Volume of cake:
  7350 cm^3 + 2154.04 cm^3
= 9504.04 cm^3

Mathology 8, *2-D Shapes and 3-D Objects*
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Observations/Documentation