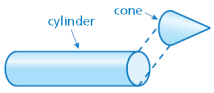
Math 7H - Unit 5

Day 18 - Volume of Composite Solids

Lesson Objectives:

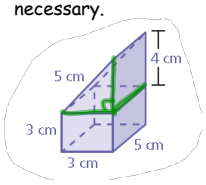
- I can draw geometric shapes with given conditions.
- I can solve real-world and mathematical problems involving volume of three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms.

A **composite solid** is a figure made up of more than one solid.



To find the volume of a composite solid, find the volume of each solid that the figure is made up of.

Identify the solids that make up the composite solid. Then find the volume. Round your answer to the nearest tenth, if necessary.



Triangular Prism

$V = Bh$

$= (\frac{1}{2} \cdot 3 \cdot 4) \cdot 5 = 30 cm^3$

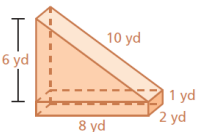
Rectangular Prism

$V = Bh$

$V = (3 \cdot 3) 5 = 45 cm^3$

$30 + 45 = 75 cm^3$

Identify the solids that make up the composite solid. Then find the volume. Round your answer to the nearest tenth, if necessary.



Triangular Prism

$V = Bh$

$= (\frac{1}{2} \cdot 6 \cdot 8) \cdot 2 = 48 yd^3$

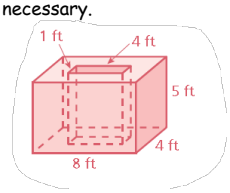
Rectangular Prism

$V = Bh$

$= (8 \cdot 1) \cdot 2 = 16 yd^3$

$48 + 16 = 64 yd^3$

Identify the solids that make up the composite solid. Then find the volume. Round your answer to the nearest tenth, if necessary.



Outer Rectangular Prism

$V = Bh$

$= (8 \cdot 4) 5 = 160 ft^3$

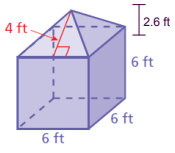
Inner Rectangular Prism

$V = Bh$

$= (4 \cdot 1) 5 = 20 ft^3$

$160 - 20 = 140 ft^3$

Identify the solids that make up the composite solid. Then find the volume. Round your answer to the nearest tenth, if necessary.



Square Pyramid

$V = \frac{1}{3} Bh$

$= \frac{1}{3} (6 \cdot 6) \times 2.6$

$= 31.2 ft^3$

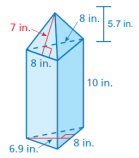
Cube

$V = Bh$

$= (6 \cdot 6) \cdot 6 = 216 ft^3$

$31.2 + 216 = 247.2 ft^3$

Identify the solids that make up the composite solid. Then find the volume. Round your answer to the nearest tenth, if necessary.



Triangular Pyramid

$V = \frac{1}{3}Bh$

$= \frac{1}{3}\left(\frac{1}{2}\cdot 8 \cdot 6.9\right) 5.7$

$= 52.44 in^3$

Triangular Prism

$V = Bh$

$= \left(\frac{1}{2}\cdot 8 \cdot 6.9\right)\cdot 10$

$= 276 in^3$

$52.44 + 276 = 328.44 in^3$

Homework

Volume of Composite Solids WKS

* Individual Think Time *

What to do if you get stuck...

1. Reread the problem. Did you write it down correctly?
2. Reread your notes. Is there a problem similar that we did together in class?
3. Find a problem similar in your book. Try this one to see if it helps.
4. Skip the problem until the end of Individual Think Time. Then ask an "educated" question of a neighbor or Mrs. Call.

Today we're working by...