

Review of SA and V; Converting Units for SA and V

Hello Commisioner? How do I calculate surface area again?



POS Checklist:

- 3.1 Sketch a diagram to represent a problem that involves surface area or volume.
- 3.5 Solve a problem that involves surface area or volume, given a diagram of a composite 3-D object.

And now for something completely different...

http://www.youtube.com/watch?v=V5aDPc1Cs5U&safety_mode=truo&persist_safety_mode=1

What do you know about
Surface Area and **Volume** ?

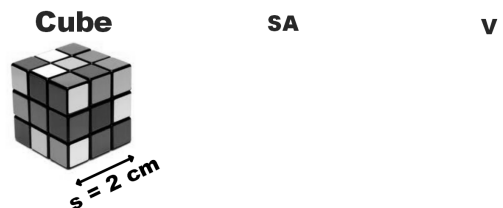
Recall:

Surface Area: the sum of the areas of each side of a 3D object.

Volume: the amount of space an object takes up, in a right prism/pyramid/cylinder, $V = A_{\text{base}}h$



Review: Calculate the surface area and volume of the following shapes.



Test: is this correct?



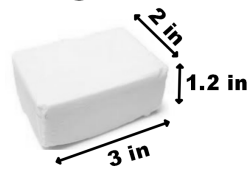
ex) A die has a volume of 216 mm^3 . Determine the side length of the die.



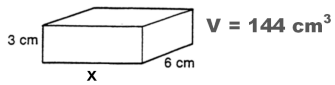
Rectangular Prism

SA

V



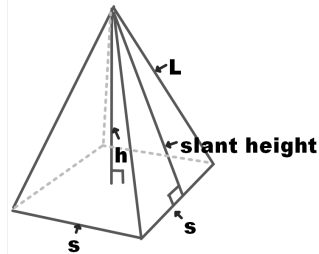
Determine the value of x for the right prism below.



Right Pyramid

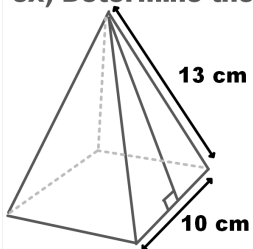
SA

Q: What is a "right" pyramid?
A: A pyramid with a "right" shape for a base: i.e. a square, equilateral triangle, pentagon, etc)



$s = \text{side} = 6 \text{ cm}$
 $h = \text{height} = 7 \text{ cm}$
 $L = \text{length of triangle side} = 5 \text{ cm}$
 slant height = 4 cm

ex) Determine the SA of the right pyramid.



Circle

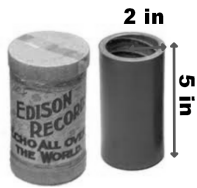
Area



Cylinder

SA

V



ex) A cylinder has volume of 500 cm^3 and a height of 13 cm. Determine the radius of the cylinder to the nearest hundredth.

Conversions of Squared and Cubed Units

2 Methods:

Method 1: Convert the units before you answer the question.

ex) A rectangular prism has dimensions of 3 cm x 5 cm x 2 cm. What is the volume in m^3 ?

Method 2: Convert the units after you answer the question by multiplying by the square (for area) or cube (for volume) of the regular conversion factor.

ex) A circle has an area of 45 cm^2 . Express this area in m^2 .

Step 1: Write the conversion factor.

Step 2: Square the factor.

Step 3: Use unit analysis to convert units as usual.

ex) A pop can has a volume of 250 mm^3 . Express this in m^3 .

Step 1: Write the conversion factor.

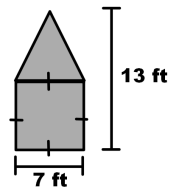
Step 2: Square the factor.

Step 3: Use unit analysis to convert units as usual.

ex) Calculate the area of the following shape in

a) square feet

b) square inches



Practice: Page 61 #1-7, 9, 11, 12 ab,