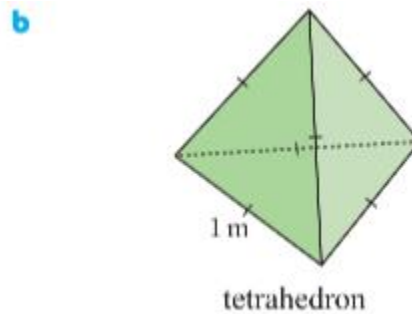
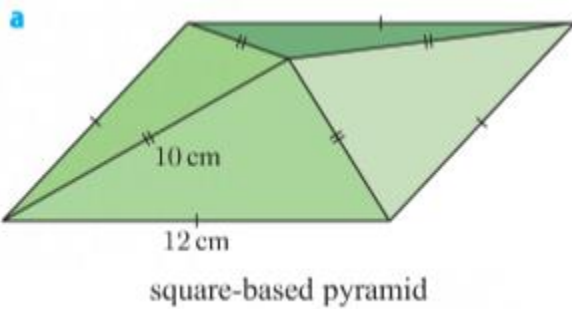
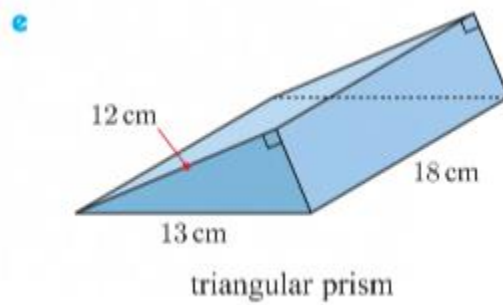
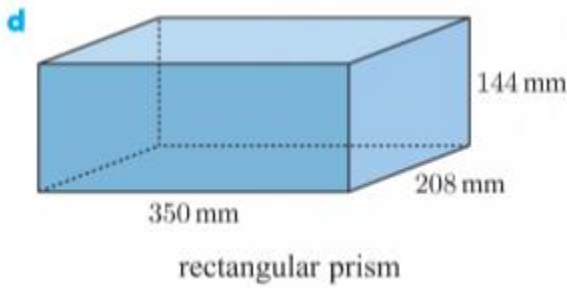
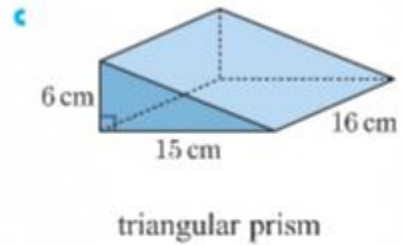
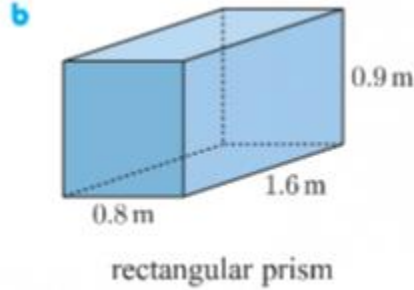
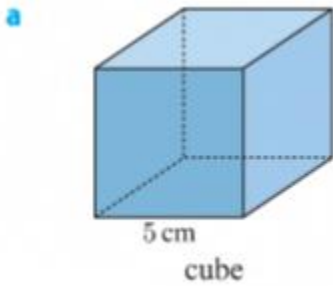


Lesson 2.5 – Surface Area & Volume of Solids (Math 9/10 Book pages 115-127)

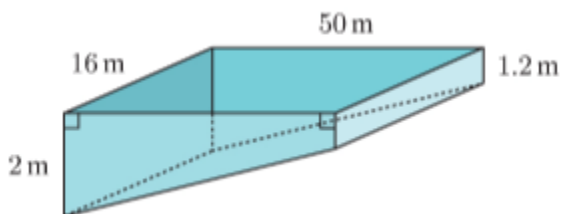
The **surface area** of a three-dimensional figure with plane faces is the sum of the areas of the faces. The surface area is therefore the same as the area of the net required to make the figure.

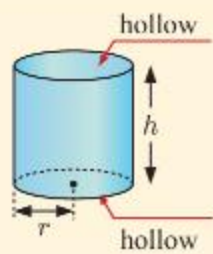
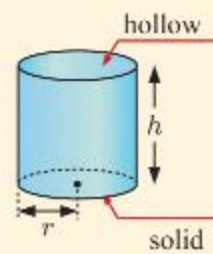
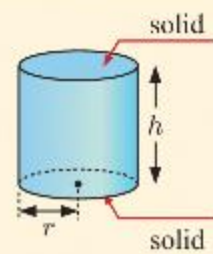
**I. Surface Area**

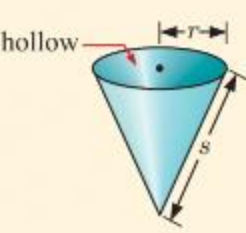
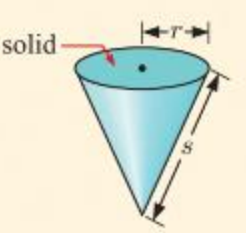
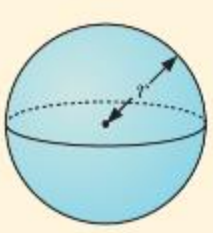
1. Find the surface area of the following solids.



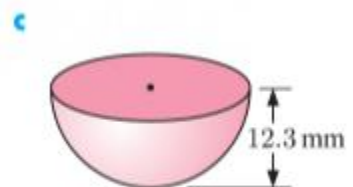
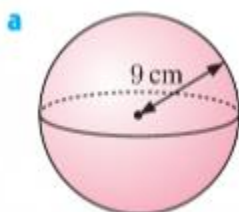
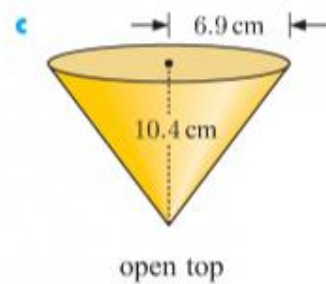
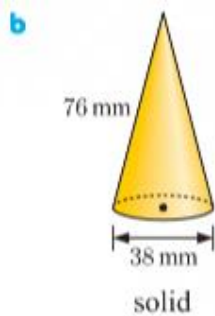
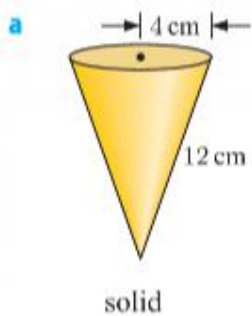
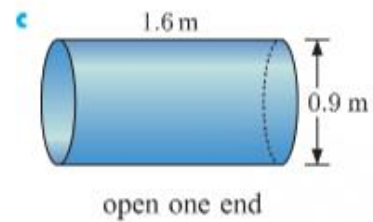
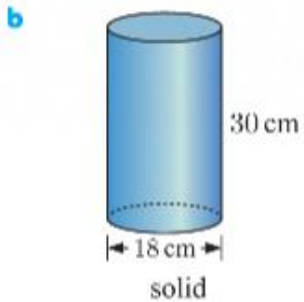
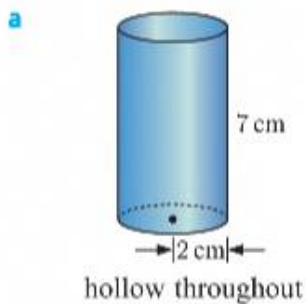
2. The base and walls of the swimming pool shown below are tiled. The tiles cost \$25/m<sup>2</sup>.
- Find the total area of the tiles.
  - Find the value of the tiles.



Hollow cylinder (no ends)	Open can (one end)	Solid cylinder (two ends)
 $A = 2\pi rh$	 $A = 2\pi rh + \pi r^2$	 $A = 2\pi rh + 2\pi r^2$

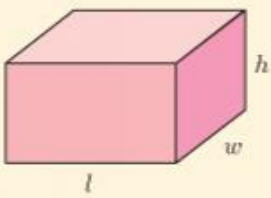
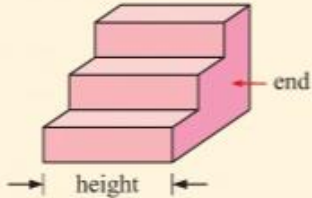
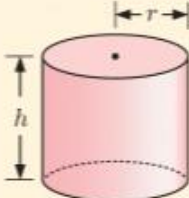
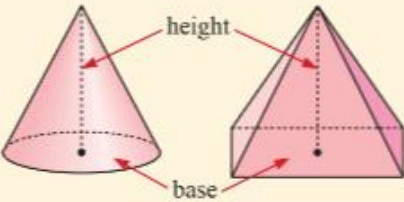
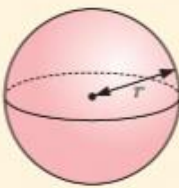
Hollow cone (no end)	Solid cone (closed end)	Sphere
 $A = \pi rs$	 $A = \pi rs + \pi r^2$	 $A = 4\pi r^2$

3. Find the outer surface area of the following figures.

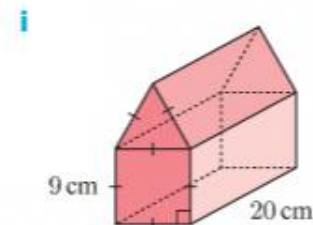
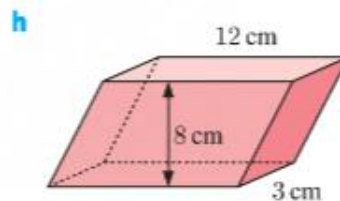
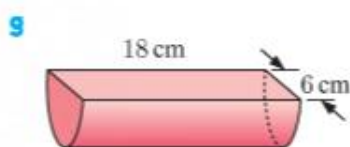
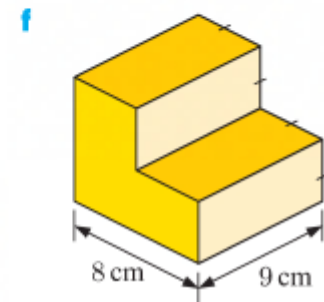
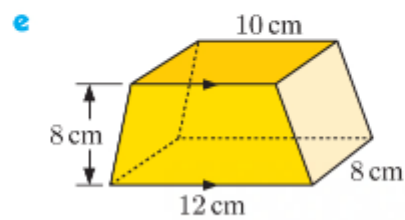
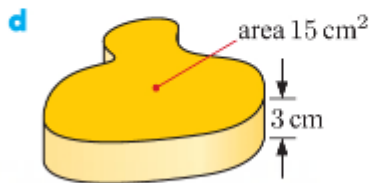
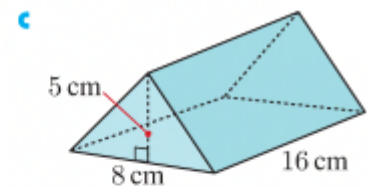
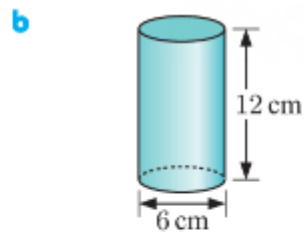
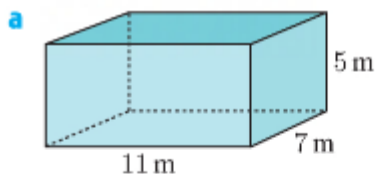


## II. Volume

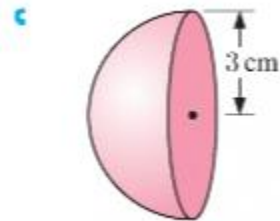
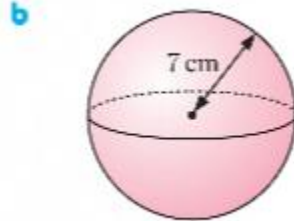
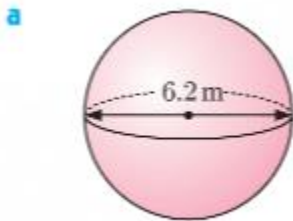
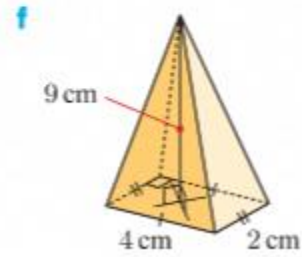
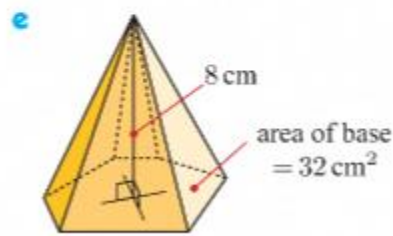
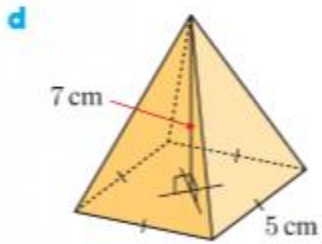
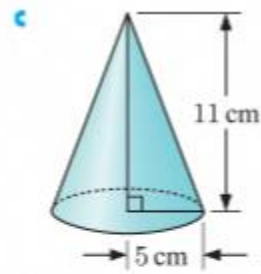
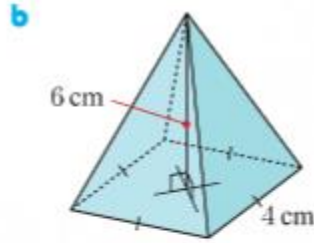
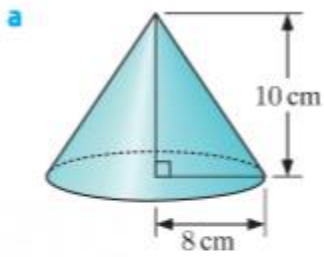
The **volume** of a solid is the amount of space it occupies.

Rectangular prism	Solid of uniform cross-section	Cylinder
 <p><math>V = l \times w \times h</math></p>	 <p><math>V = \text{area of end} \times \text{height}</math></p>	 <p><math>V = \pi r^2 h</math></p>
Tapered solid		Sphere
 <p><math>V = \frac{1}{3} \times \text{area of base} \times \text{height}</math></p>		 <p><math>V = \frac{4}{3} \pi r^3</math></p>

4. Find the volume of the following:



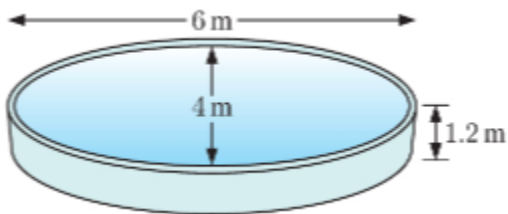
5. Find the volume of the following:



6. A hollow spherical glass snow globe has an internal diameter of 6.8cm and external diameter of 7.0cm. What volume of glass was used to make it?



7. How much water is needed to fill this elliptical swimming pool?



8. Mr. Braza has sugar cubes with sides of length 12mm.
- How many sugar cubes will she need to crush to fill a teaspoon with volume  $5 \text{ cm}^3$ .
  - How much sugar will be left over from the last cube?