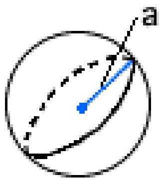
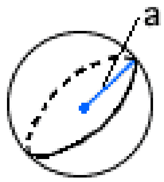
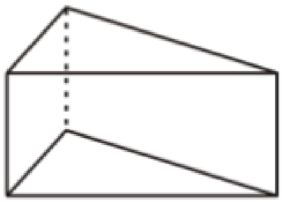
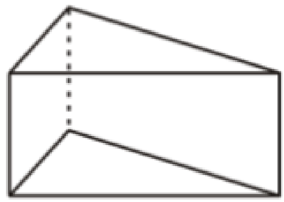
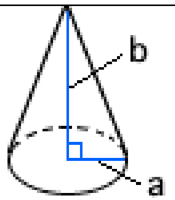
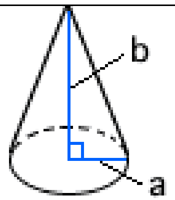
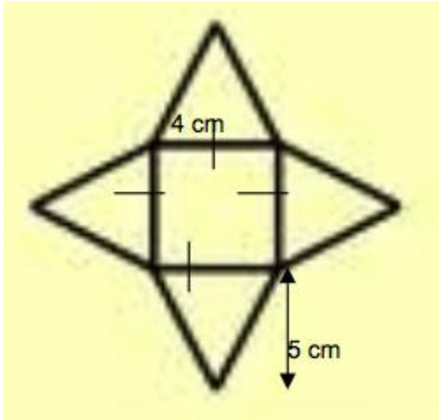
1. Given the diagrams included, determine BOTH the volume and surface area of each figure

VOLUME	SURFACE AREA
The radius, *a*, is 2.75 meters  	The radius, *a*, is 2.75 meters 
	
 a = 6 m b = 8 m	 a = 6 m b = 8 m

2. Take a look at the following net.



   a. What 3-D shape would be formed by this net?

   b. What would the surface area of this 3-D shape be?

   c. What would the volume be?

3. The farm near my home stores its corn and grains in silos. Each silo consists of a cylinder and a conical top. The measurements are as follows: the height of the cylinder is 25 m and its diameter is 30 m. The height of the cone at the top is 10 m.

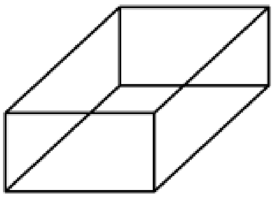
   a. Determine the storage capacity, in litres, of the silo, remembering that $1 \text{ m}^3 = 1000\text{L}$.

- Example 3 continued -

b. Determine the amount of sheet metal (surfaces that you see) that are used to make the silo

c. If each $1m^2$ of sheeting costs \$250, determine the cost of the metal used.

d. Additionally, to provide a bottom for the silo, a cement "slab" in the shape of a rectangular prism is made. If the cement base measures 35 m x 32 m x 50 cm, and cement costs \$50 per cubic meter, how much does the cement cost?



4. A typical cylinder for a can of apple juice has a diameter of 12 cm and a height of 22 cm.

   a. Determine the volume of the container. If 1 cm^3 = 1 mL, how many litres of apple juice does the can hold?

   b. Determine the surface area of the can, assuming that all surfaces are made of the same material.

   c. Mr Santowski thinks that the company designing the container can reduce their costs for the container, simply by changing the dimensions (measurements) of the can. I propose that the diameter gets changed to 15 cm.

      I. Determine the new height of the can.

      II. Determine the new surface area of the can.

   d. If 1 cm^2 costs the company $0.054, how much money does the new design save (or how much extra does the new design cost?)