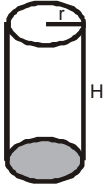
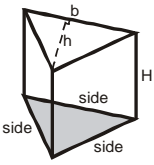
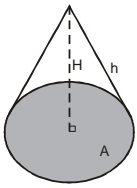
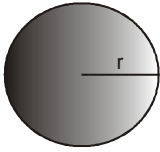
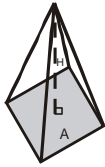
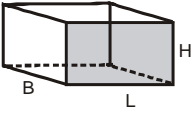
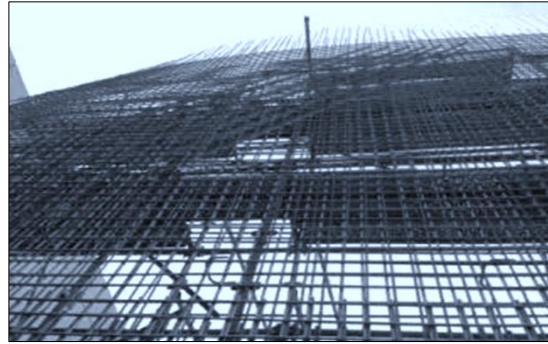


**L9: Exercise 1: Volume**

**(a) Complete the table:**

**Date:** \_\_\_\_\_

<b>VOLUME 3D-FIGURES AND FORMULAS:</b>		
	<p>Cylinder</p> <p>H=20cm</p> <p>r=10mm</p> <p><math>\pi = 3,142</math></p>	<p><math>Volume = \pi r^2 \times \perp H</math></p> <hr/> <hr/>
	<p>Prism</p> <p>Area of base=21cm<sup>2</sup></p> <p>H=14cm</p>	<p><math>Volume = area\ of\ base \times \perp H</math></p> <hr/> <hr/>
	<p>Cone</p> <p>Area of the base=12cm<sup>2</sup></p> <p>H=14cm</p>	<p><math>Volume = \frac{1}{3} \times area\ of\ base \times \perp H</math></p> <hr/> <hr/>
	<p>Sphere</p> <p>r= 10cm</p> <p><math>\pi = 3,142</math></p>	<p><math>Volume = \frac{4}{3} \times \pi \times r^3</math></p> <hr/> <hr/>
	<p>Pyramid</p> <p>Base= 9cm<sup>2</sup></p> <p>Height=9cm</p>	<p><math>Volume = \frac{1}{3} \times area\ of\ base \times \perp H</math></p> <hr/> <hr/>
	<p>Cuboid</p> <p>Length=50cm</p> <p>Breadth=20cm</p> <p>Height=30cm</p>	<p><math>Volume = area\ of\ base \times \perp H</math></p> <hr/> <hr/>



(The time difference between the top and bottom photos is 3 months)



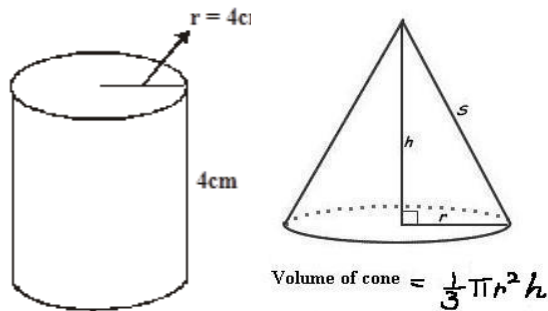
(b) The photos above show a 25m span bridge at the new Rosebank Mall shopping centre. It must be strong enough to carry three storeys. The walls are 250mm thick and 12m high. Calculate the amount of concrete that the contractor must order to build this wall.

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(c) A cylinder has to be filled with oil. The cylinder has a radius of 20 cm and a height of 40 cm. How many litres of oil will be needed to fill up the cylinder if 1 litre = 0,001 m<sup>3</sup>. The volume of the cone is a third of the volume of a cylinder. How many litres of oil will be needed to fill up the cone?




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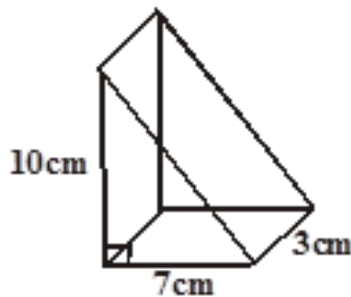


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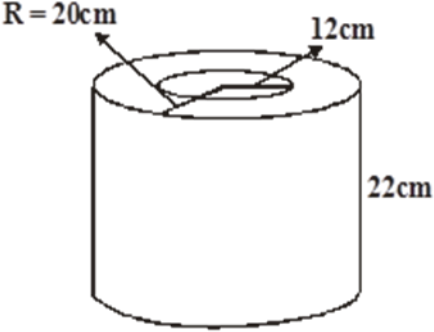
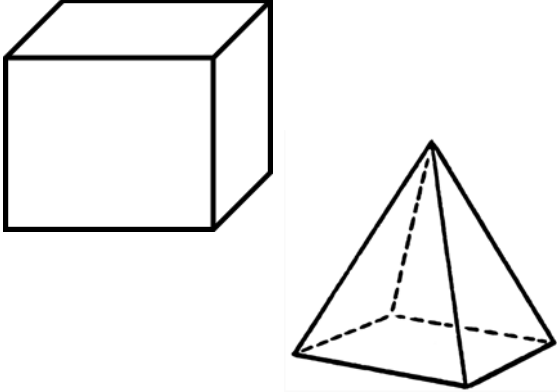

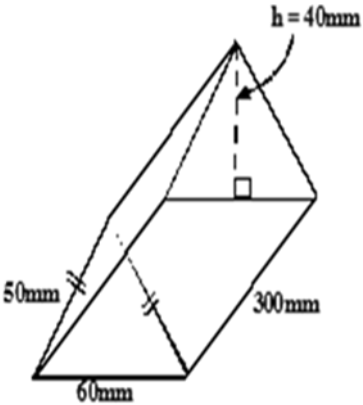
(d) Woolworths package their sandwiches in containers as shown in the figure. Calculate the volume of this container.




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	<p>(e) This is a pipe. Calculate the volume of the steel needed to produce this pipe. Calculate the volume of the outer cylinder. What is the volume of the inner cylinder? Calculate the difference.</p> <hr/>
	<p>(f) Study the formulas in the table. The pyramid is a third of the cube, if the squares are the same. If the lengths of the sides of the cube is 5cm, calculate the volume of the cube and the pyramid ( the same base area for the square)</p> <hr/> <hr/>
	<p>(g) This is a tank for fish. The measurements of the sides are as follows:  Length: 1,7m  Height: 500mm  Breadth: 700 mm  Convert the side lengths to the same unit. Determine the volume in <math>\text{cm}^3</math>. Do the conversion into <math>\text{ml}</math>. How many litre is it?</p>
	<p>(h) A farmer wants to feed his chickens from the container. Determine the volume of the container.</p> <hr/> <hr/> <hr/> <hr/>

