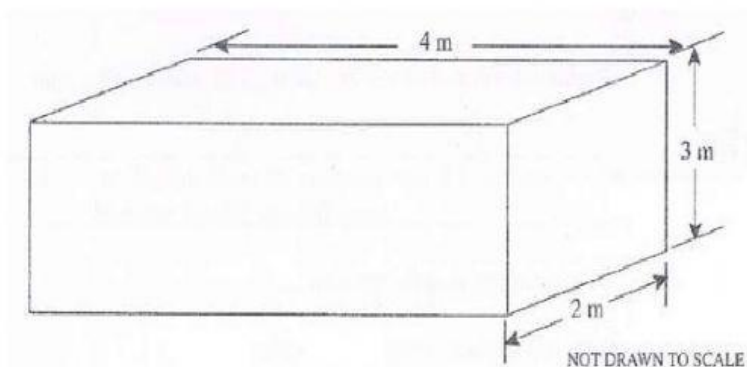


**ACTIVITY # 3.1 Volume and Density****Date due:** \_\_\_\_\_

19

1. A rectangular stone is resting on the ground. The block is 3m thick, 2m wide and 4m long.



- Calculate the volume of the block.
- The mass of the block is 10kg. Calculate the density of the block.
- The block is thrown into the water. Will the block float or sink in water? Why?
- The mass of the block is doubled, what do you think will happen to its density?

2. A piece of metal with a mass of 125 g has a density of  $5.0 \text{ g/cm}^3$ . A piece of wood has a mass of 50g. Both the piece of metal and the piece of wood are tied together and totally submerged in water. It is discovered that together they displace 90g of water.

The density of water is  $1.00 \text{ g/cm}^3$ . Determine the following:

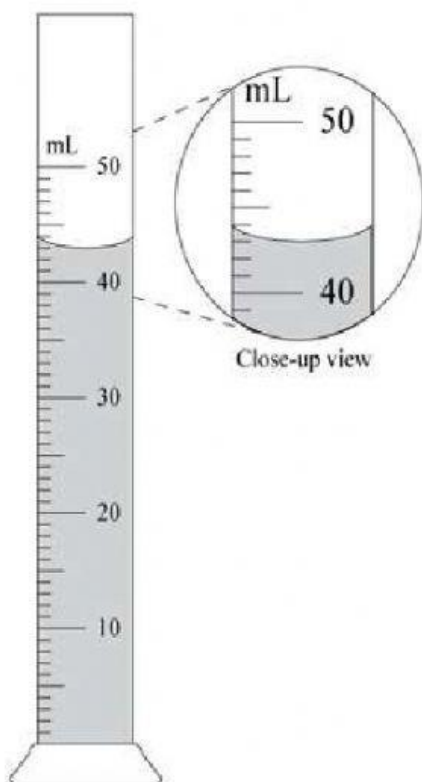
a) volume of water displaced;

b) volume of the piece of metal;

c) volume of the wood;

d) the density of the wood

3. Linda was using a measuring cylinder to measure the volume of a liquid. The figure below shows the level of the liquid. Linda recorded the reading as  $44 \text{ cm}^3$ .



a. Was Linda's reading of the volume of liquid correct? Explain your answer.

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b. If Linda's reading was incorrect, what is the correct reading?

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c. Name another type of common error made when taking measurements and explains how it occurs.

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4. Victoria was asked to compare the density of two items and was given the following information.

Item A

Mass = 27 g  
Volume =  $10 \text{ cm}^3$

Item B

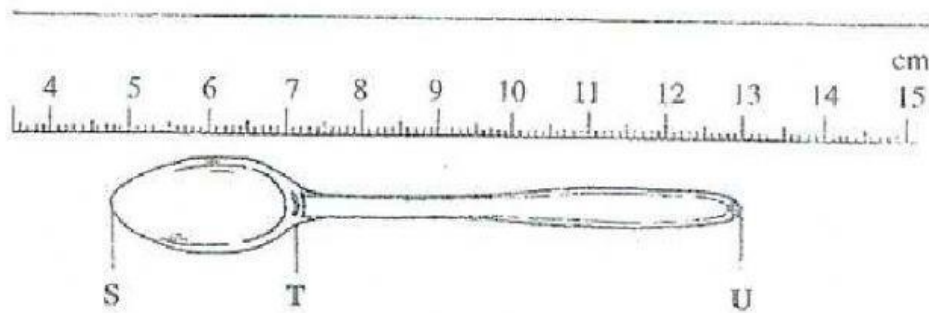
Mass = 40g  
Volume =  $14.8 \text{ cm}^3$

a. What are the densities of Item A and Item B?

b. Give one possible conclusion that Victoria can draw from (a).

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5. The diagram shows the linear measurement of a teaspoon.



- (a) (i) Find the length of the teaspoon.  
 \_\_\_\_\_ [1]
- (ii) Determine the length of the teaspoon between T and U. (Show all working).  
 \_\_\_\_\_ [1]
- (b) (i) Name the instrument which could determine the mass of the teaspoon.  
 \_\_\_\_\_ [1]
- (ii) Calculate the weight of the teaspoon if its mass is 27 g.  
 \_\_\_\_\_ [1]
- (c) (i) Calculate the density of the spoon if the volume is 15 cm<sup>3</sup>.  
 \_\_\_\_\_ [1]

[2]