$Cm^3 = mL$

Section 3.6 – Practice Problems

1. Annika is selling drinks for a Leadership Fundraiser. The compostable eco-friendly cups she is using are in the shape of a cone. They have a diameter of $5.6cm$ and a height of $8.5cm$. Determine the capacity of the cups in mL.

$\downarrow r = \frac{5.6}{2} = 2.8$

V of Cone : $\frac{1}{3}\pi r^2 \cdot h$

$\frac{1}{3}(3.14)(2.8)^2(8.5) = 69.7 cm^3$ so $\boxed{69.7 mL}$

2. A new Covid-19 vaccine is being delivered by cylindrical capsule medication with sphere tops as shown in the diagram. How much medication can the capsule hold:

$1.3cm$
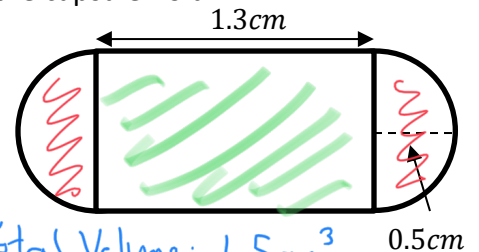
a) Determine volume to the nearest cubic centimeter

V of green portion : cylinder

V of red : sphere

Total Volume : $1.5 cm^3$ $0.5cm$

$V = \pi r^2 \cdot h$

$0.52 = \frac{4}{3}\pi r^3 = \frac{4}{3}(3.14)(0.5)^3$ $V = \pi(0.5)^2(1.3) = 1.02 cm^3$

b) What is the capacity of the capsule in mL?

$1.5 cm^3 \rightarrow \boxed{1.5 mL}$

3. A spherical gas storage tank has an inner radius of $10m$. Determine its capacity to the nearest litre. How much does the gas weigh in tonnes ($1 tonne = 1000kg$)?

4. A rectangular tuna tin has a capacity of $180mL$. If it has a height of $3cm$ and the width is $7.5cm$, how big is the length of the tin?

5. Determine the capacity of the barn below in $Litres$.

$3m$

$2m$ $7m$

$3m$
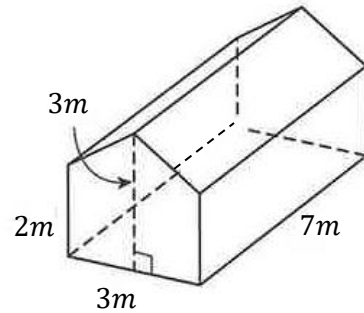
6. What is the capacity, in millilitres, of a sphere with a radius of $38mm$.

7. What is the capacity of this massive cone in mL?

$13m$

$12m$

$5m$