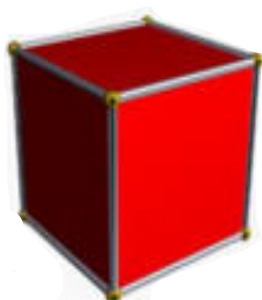


The name game



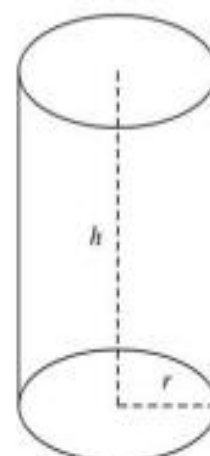
Cube



Rectangular Prism



Sphere



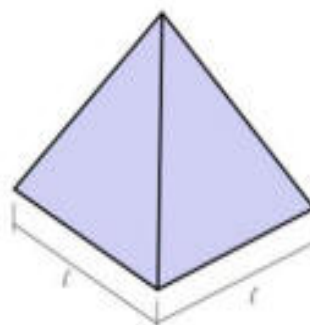
Cylinder



Triangular Prism



Cone

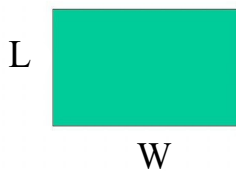


Pyramid

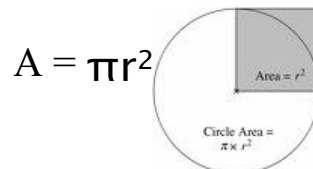
Area of Shapes

Area of a Rectangle

A = length x width



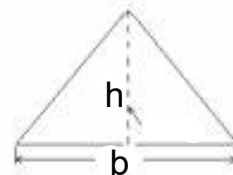
Area of a Circle



$$A = \pi r^2$$

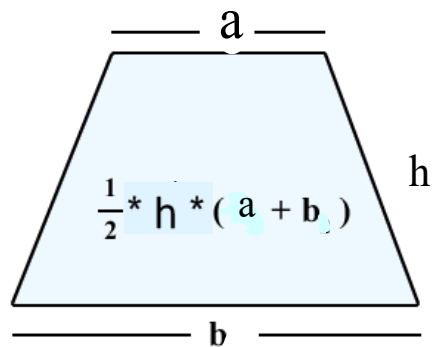
Area of Triangle

$$A = \frac{1}{2} (\text{base} \times \text{height})$$



Area of Trapezoid

$$A = \frac{1}{2} \text{height} (a + b)$$



Volume of Containers

To save money volume should be close as possible to the volume of the product



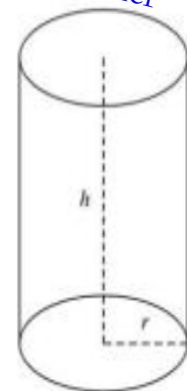
Triangular Prism

Prisms

We have to use cross-sections to help determine the area and volume of a container



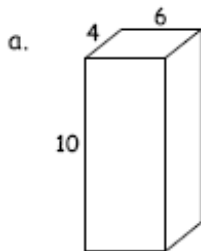
Rectangular Prism



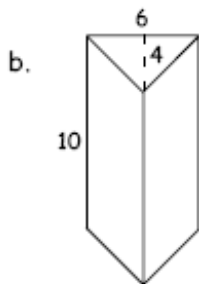
Cylinder

$$\text{Volume} = (\text{Area of the base}) \times \text{Height}$$

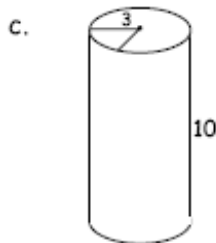
Find the volumes (dimensions are cm):



$$\begin{aligned} \text{a) } V &= \text{Area of Base} \times \text{height} \\ V &= l \times w \times h \\ V &= 6 \times 4 \times 10 \\ V &= 240 \text{ cm}^3 \end{aligned}$$



$$\begin{aligned} \text{b) } V &= \text{Area of Base} \times \text{height} \\ V &= \frac{b \times h}{2} \times h \leftarrow \text{prism} \\ V &= \frac{6 \times 4}{2} \times 10 \end{aligned}$$



$$\begin{aligned} V &= 12 \times 10 \\ V &= 120 \text{ cm}^3 \end{aligned}$$

$$\text{c) } V = \text{Area of Base} \times \text{height}$$

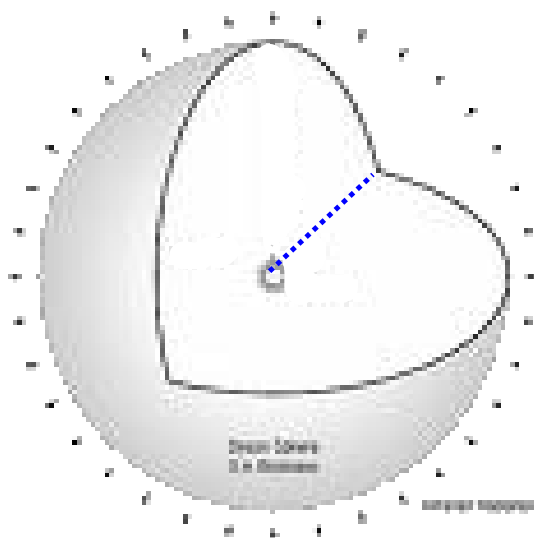
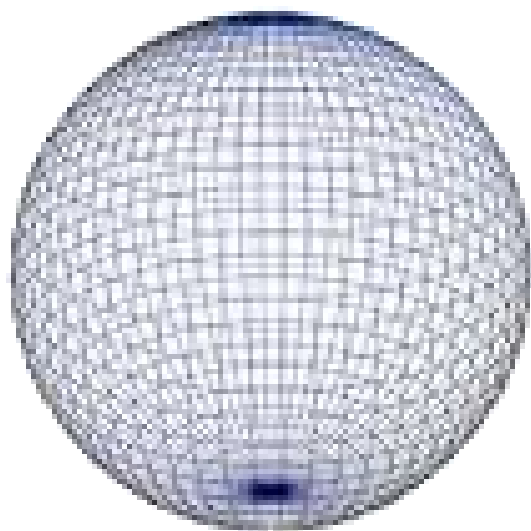
$$V = \pi r^2 \times h$$

$$V = (3.14)(3)^2 \times 10$$

$$V = 28.26 \times 10$$

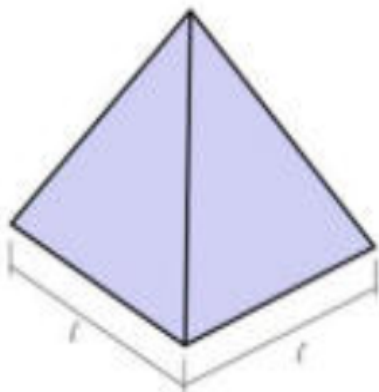
$$V = 282.6 \text{ cm}^3$$

Sphere



$$V = \frac{4\pi r^3}{3}$$

Anything that comes to a point



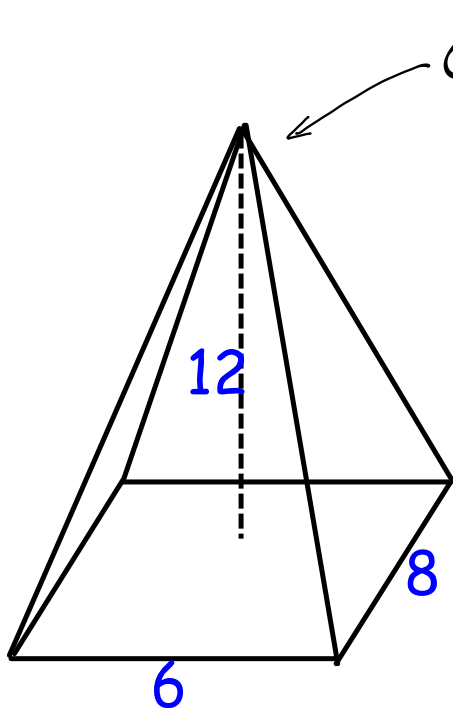
Pyramid

Pyramid
or
Cone



Cone

$$V = \frac{1}{3} (\text{Area of base}) \times \text{Height}$$



Comes to a point!

Determine the Volume

$$V = \frac{1}{3} (\text{Area of Base}) \times h$$

$$V = \frac{1}{3} (l \times w) \times h \rightarrow \boxed{V = \frac{1}{3} lwh}$$

$$V = \frac{1}{3} (8 \times 6) \times 12$$

$$V = \frac{1}{3} (48) \times 12$$

$$V = 16 \times 12$$

$$\boxed{V = 192 \text{ units}^3}$$

A "DrumStick" icecream bar has the following dimensions shown. What is the volume?



(comes to a point!)

$$V = \frac{1}{3} (\text{Area of Base}) \times \text{height}$$

$$V = \frac{1}{3} (\pi r^2) \times h \rightarrow \boxed{V = \frac{1}{3} \pi r^2 h}$$

$$V = \frac{1}{3} (3.14)(4)^2 \times 13$$

$$V = \frac{1}{3} (50.24) \times 13$$

$$V = \frac{653.12}{3}$$

$$\boxed{V = 217.71 \text{ unit}^3}$$

Homework

Answers:

$$\textcircled{1} 891 \text{ yds}^3$$

$$\textcircled{2} 75.4 \text{ km}^3$$

$$\textcircled{3} 144 \text{ m}^3$$

$$\textcircled{4} 441 \text{ yd}^3$$

$$\textcircled{5} 659.2 \text{ m}^3$$

$$\textcircled{6} 201 \text{ ft}^3$$

$$\textcircled{7} 96 \text{ ft}^3$$

$$\textcircled{8} 12 \text{ cm}^3$$

$$\textcircled{9} 3052.1 \text{ m}^3$$

$$\textcircled{10} 36 \text{ cm}^3$$

$$\textcircled{11} 1452 \text{ m}^3$$

$$\textcircled{12} 40 \text{ mi}^3$$