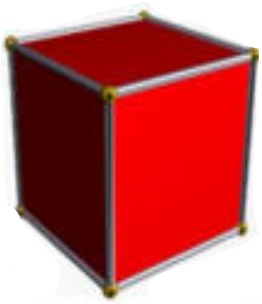
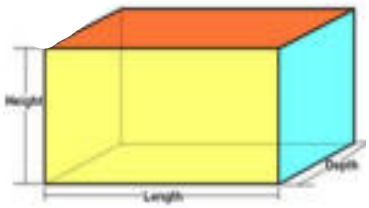
The name game



Cube



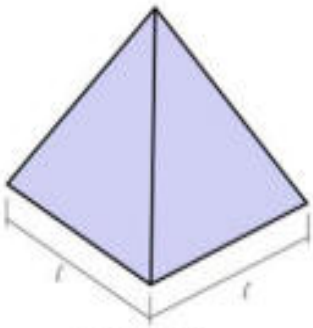
Rectangular Prism

Sphere

Cylinder

Triangular Prism

Cone

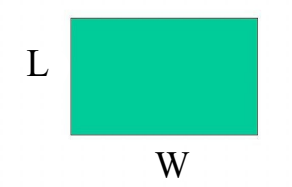


Pyramid

Area of Shapes

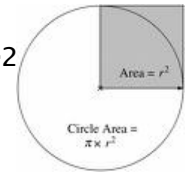
Area of a Rectangle

A = length x width



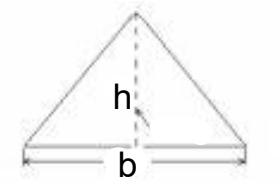
Area of a Circle

$A = \pi r^2$



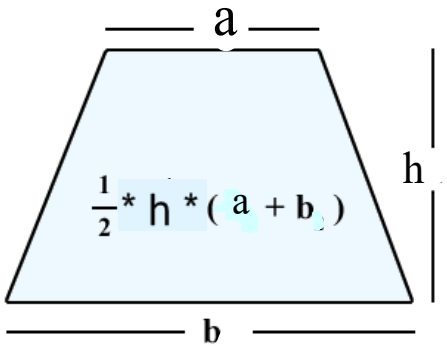
Area of Triangle

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



Area of Trapezoid

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

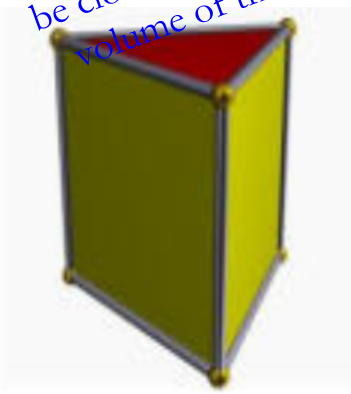


Volume of Containers

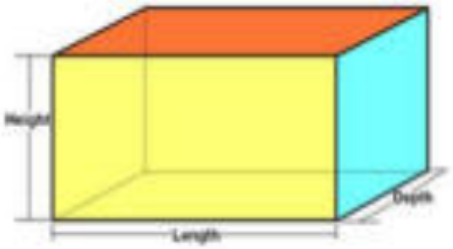
To save money volume should be close as possible to the volume of the product

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

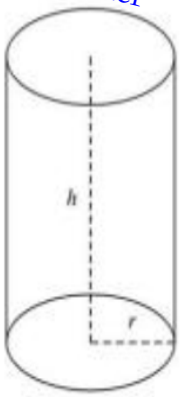
Prisms



Triangular Prism



Rectangular Prism

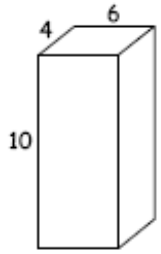


Cylinder

Volume = (Area of the base) x Height

Find the volumes (dimensions are cm):

a.



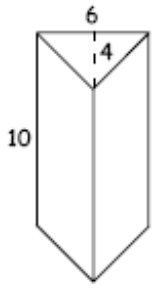
a) $V =$ Area of Base $\times$ height

$V = l \times w \times h$

$V = 6 \times 4 \times 10$

$V = 240\ cm^3$

b.



b) $V =$ Area of Base $\times$ height

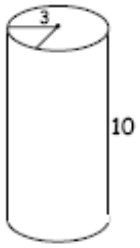
$V = \frac{b \times h}{2} \times h$ ← prism (b × h: triangle)

$V = \frac{6 \times 4}{2} \times 10$

$V = 12 \times 10$

$V = 120\ cm^3$

c.



c) $V =$ Area of Base $\times$ height

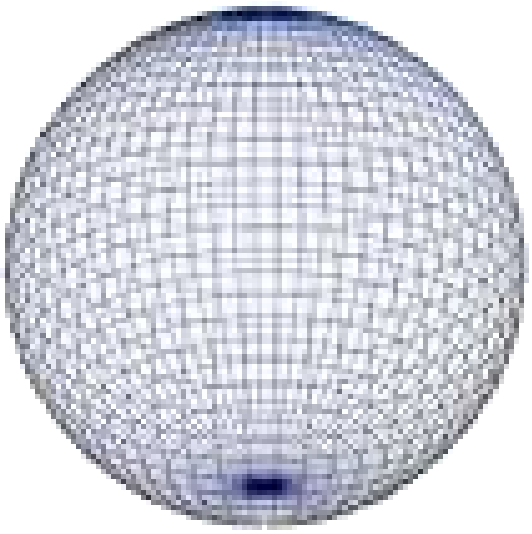
$V = \pi r^2 \times h$

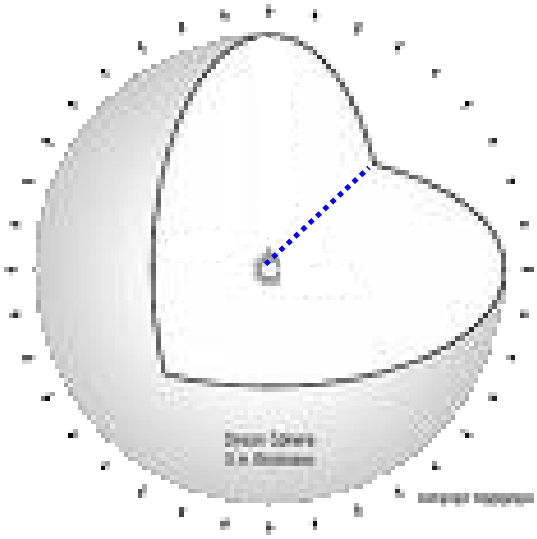
$V = (3.14)(3)^2 \times 10$

$V = 28.26 \times 10$

$V = 282.6\ cm^3$

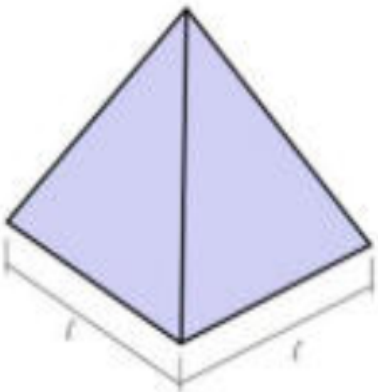
Sphere





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

Anything that comes to a point

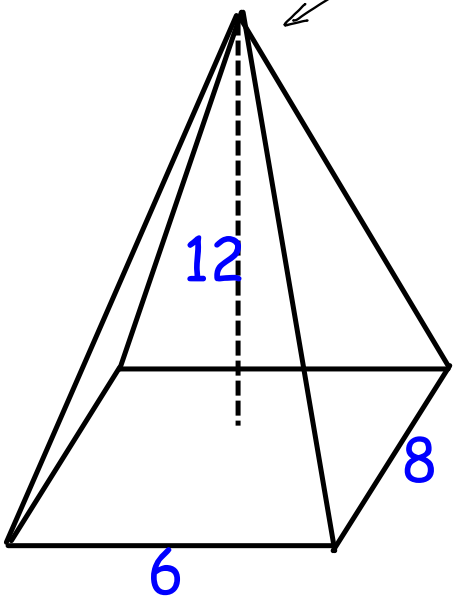


Pyramid

or

Cone

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



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:

① 891 yds^3

② 75.4 km^3

③ 144 m^3

④ 441 yd^3

⑤ 659.2 m^3

⑥ 1205.76 ft^3

⑦ 96 ft^3

⑧ 12 cm^3

⑨ 3052.1 m^3

⑩ 36 cm^3

⑪ 1452 in^3

⑫ 40 mi^3