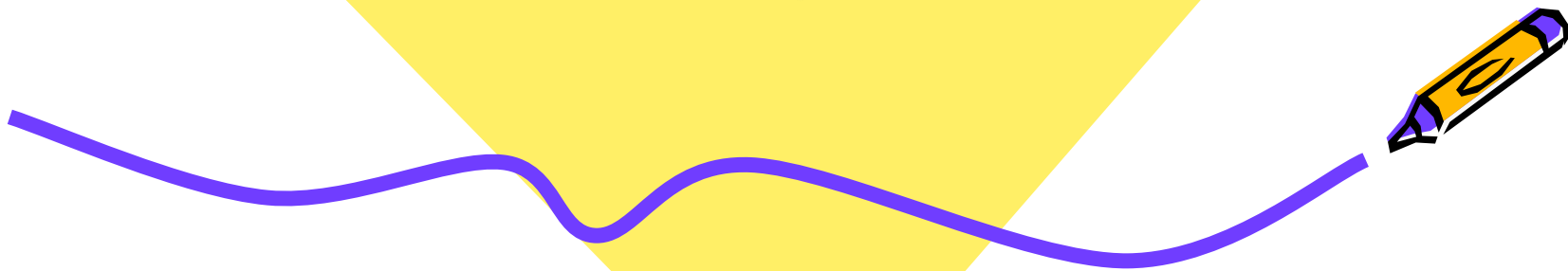


Geometry

Volume



Volume



Volume:

The amount of space, contained within.
Measurements are in units cubed.

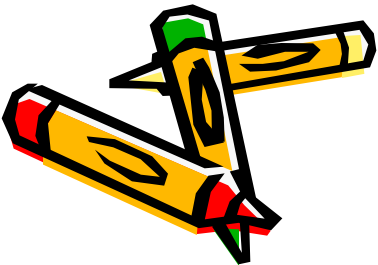
EX. Find the volume of a room that is 10-ft by 12-ft, with 8-ft ceilings. ($V = l * w * h$)

This can be expressed as:

960 cubic feet (cu. ft.)

960 feet cubed (ft. cu.)

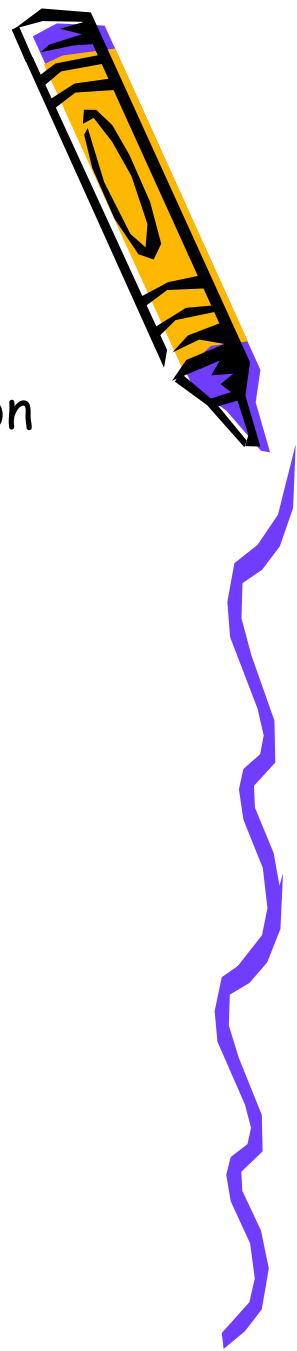
960 ft³



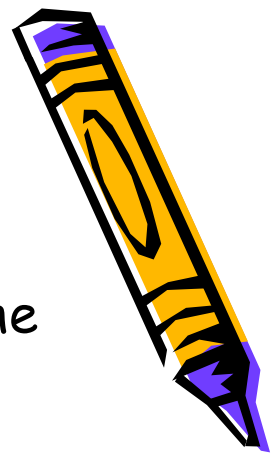
Volume

Most of the basic formulas we'll need are provided on standard formula reference sheets.

Let's highlight a few...



Volume of a Prism



Prism: polyhedron with two congruent faces (the bases) that lie in two parallel planes

Lateral Faces: the other faces of a prism that are not the bases

Rectangular Prism

$$V = (l \cdot w) \cdot h$$

Triangular Prism

$$V = \left(\frac{1}{2} bh \right) * l$$

The volume of a prism can be defined as:
the area of a base times the height (or length) of the prism.

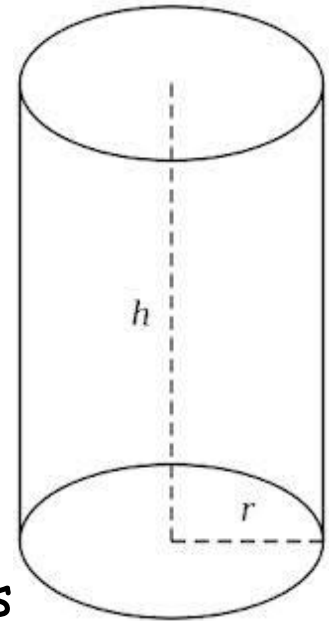


Volume of a Cylinder

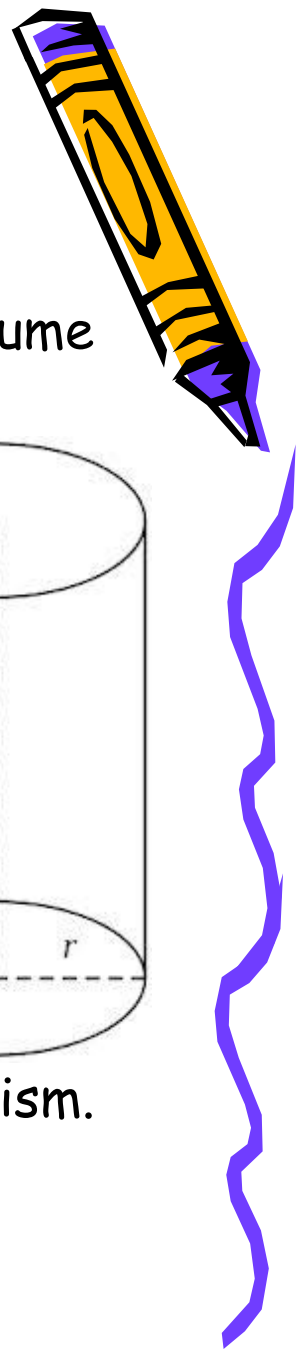
A cylinder is the equivalent of a cylindrical prism whose volume can be calculated in the same manner.

Cylinder

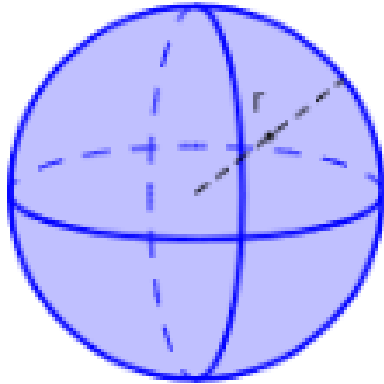
$$V = (\pi r^2) \cdot h$$



The volume of a prism can be defined as the area of a base times the height (or length) of the prism.

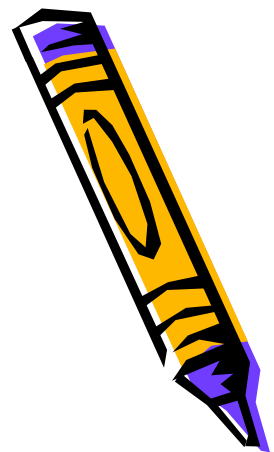


Volume of a Sphere

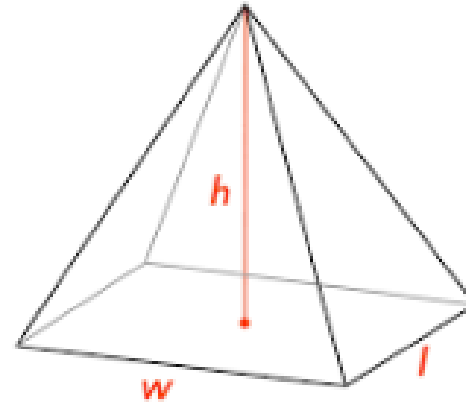
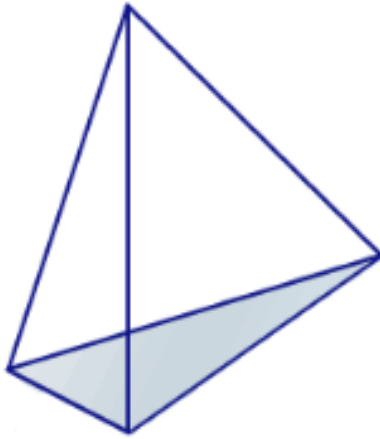


Volume of Sphere

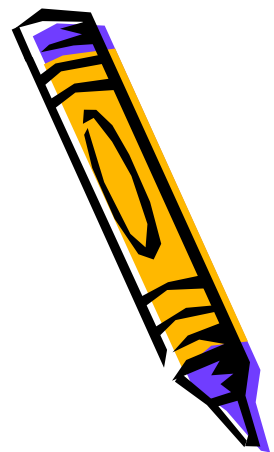
$$= \frac{4}{3} \pi r^3$$



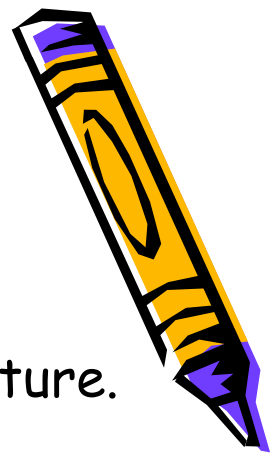
Volume of a Pyramid



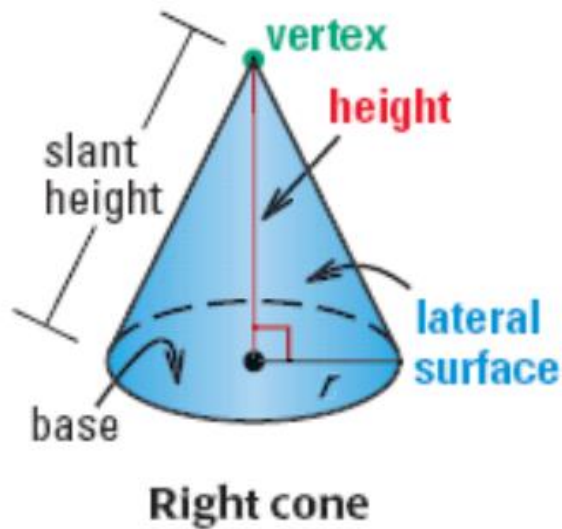
$$V = \frac{1}{3} (\text{area of the base}) (h)$$



Volume of a Cone



A cone, is in effect, a circular pyramid.
Therefore the formula for volume follows the same structure.



$$V = \frac{1}{3} (\text{area of the base}) (h)$$

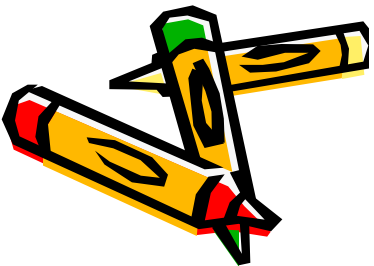
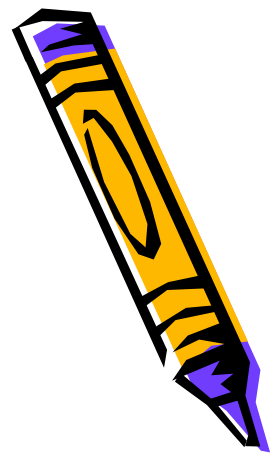
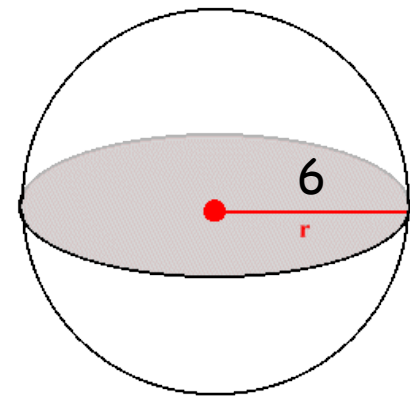
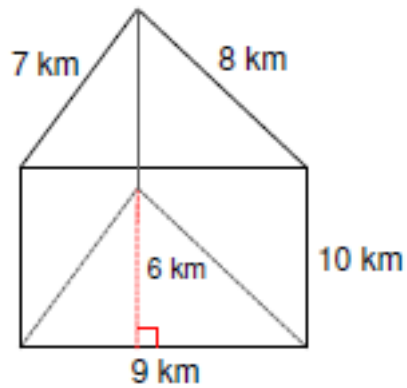
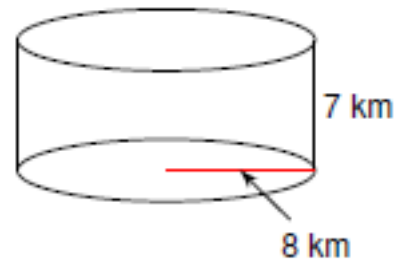
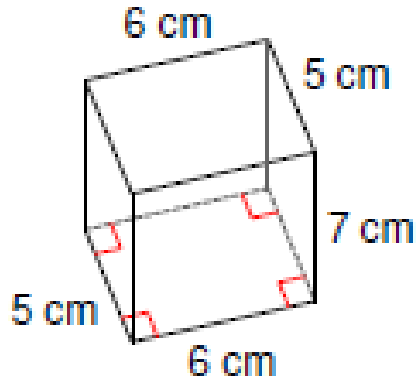
or

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



Volume

Find the volume of each figure.



Volume

Find the volume of each figure.

