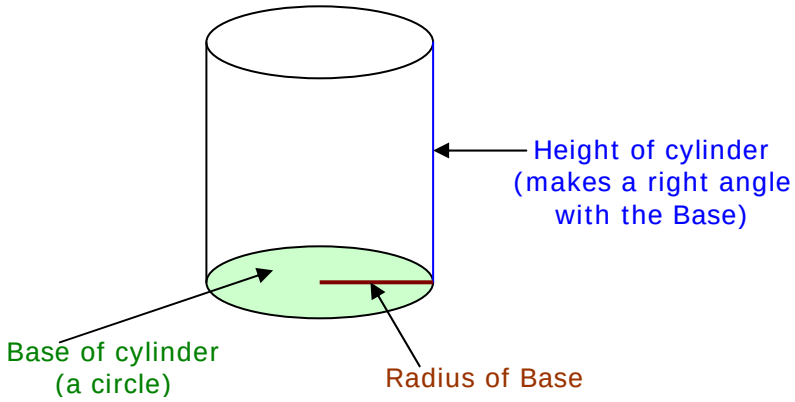
## Find the Remaining VOLUME of a Right Circular Cylinder

Flossville Park, Ahoy, Matey Subtask 4: Fill the pond with water.

Vocabulary:



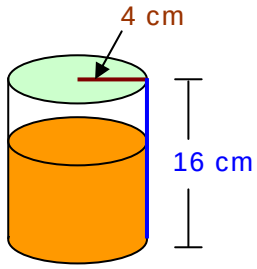

The ***volume of the cylinder*** is a measurement describing how much (in cubic units) the cylinder will hold. It is a measure of the space inside the cylinder.

The ***formula*** for finding the Volume of a right circular cylinder is:

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

where ***r*** is the radius of the circle at one base of the cylinder,
and ***h*** is the height of the cylinder (the distance between the bases.)

**Example:** The radius of the base of a paint can is 4 cm. The height of the can is 16 cm. The paint in the can fills it to a height of 10 cm. How many liters of paint thinner must be added to the can in order to completely fill it to the top? Note: 1 liter of paint thinner fills 1000 $cm^3$.




Since the remaining height is 16 – 10 or 6 cm, and using 3.14 as an approximation for $\pi$ to calculate the volume:

$$V = \pi r^2 h$$
$$V = \pi\ (4\text{ cm})^2(6\text{ cm})$$
$$V = \pi\ (16\text{ cm}^2)(6\text{ cm})$$
$$V \approx 3.14(16\text{ cm}^2)(6\text{ cm})$$
$$V \approx 301.44\text{ cm}^3$$

The remaining volume of the can is about 301.44 $cm^3$.

Since 301.44 divided by 1000 is 0.30144, it would take slightly more than 0.3 liters of paint thinner to fill the can to the top.