7.3 - VOLUME OF A CYLINDER
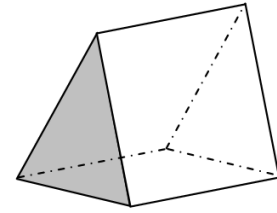
Recall:
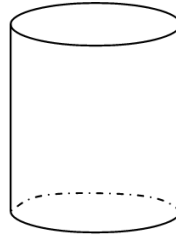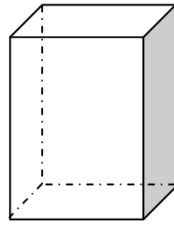
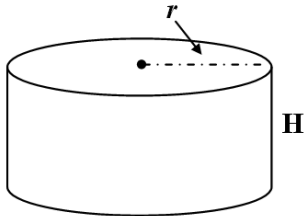| Object	rectangular prism	cylinder	triangular prism
Shape of Base	rectangle	circle	triangle

General Formula for Volume:

Volume = (Area of Base) × (Height)

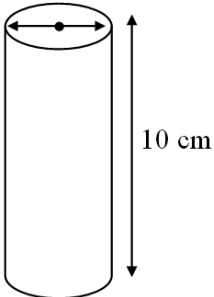*Volume of a Cylinder*　　　　　　　　　　　Shape of Base: ___circle $A = \pi r^2$___

H　$V = (\pi r^2) \times H$

$V = \pi r^2 h$

Example 1: Find the volume of the Cylinder to 2 decimal places. Use $\pi = 3.14$.
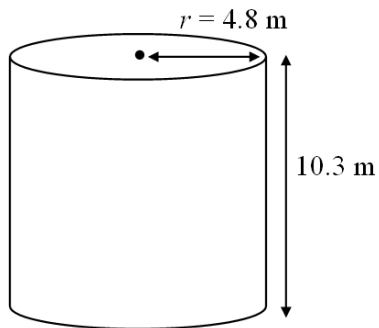
$d = 4$ cm　$r = 2$ cm　　　　　　　　　　calculator value for π

10 cm

$V = \pi r^2 h$

$= \pi (2)^2 (10)$

$= \pi (4)(10)$

$= 40\pi \doteq 125.66 \text{ cm}^3$

Mathematics 8 – 7.3

Example 2: Estimate the Volume of the following Cylinder then calculate the actual volume to the nearest tenth of a cubic metre.

$r = 4.8$ m

10.3 m

$V = \pi r^2 h$

$= \pi (4.8)^2 (10.3)$

$= 237.312\pi$

$\doteq 745.5 m^3$

Example 3: Given that the area of the base of a cylinder is $24.5\,m^2$ and the Volume is $44.1\,m^3$, what is its height?

$V = \pi r^2 h$

$44.1 m^3 = (24.5 m^2) h$

$\div 24.5 \qquad \div 24.5$

$1.8 m = h$

Assignment: p. 264 #4 – 7 (ac), 8, 12 – 14, 16