Math 8: Volume

Section 7.3

Remember that the general formula for the volume of a prism is:

$V = A_{base} \times h$

Since a cylinder has bases that are circles, the area of the base is given by πr^2. This means that the volume of a cylinder is given by the formula:

$V = \pi r^2 h$

Example 1: What is the volume of a cylinder with radius 5 cm and height 10 cm?

$V = \pi r^2 h$

$= (3.14)(5\text{cm})^2(10\text{cm})$

$V = 785\text{cm}^3$

Example 2: What is the volume of a cylinder with diameter 6 cm, and height 8 cm?

$r = \frac{d}{2}$

$= \frac{6\text{cm}}{2}$

$= 3\text{cm}$

$V = \pi r^2 h$

$= (3.14)(3\text{cm})^2(8\text{cm})$

$V = 226.08$

How can we get more volume? What dimensions of a cylinder will give the largest volume?

A cylinder with the same diameter as its height will have the largest volume.

- Homework:
  - Pg 250 #3-5
  - Pg 253 #4-10

Pg 265 #4-18