

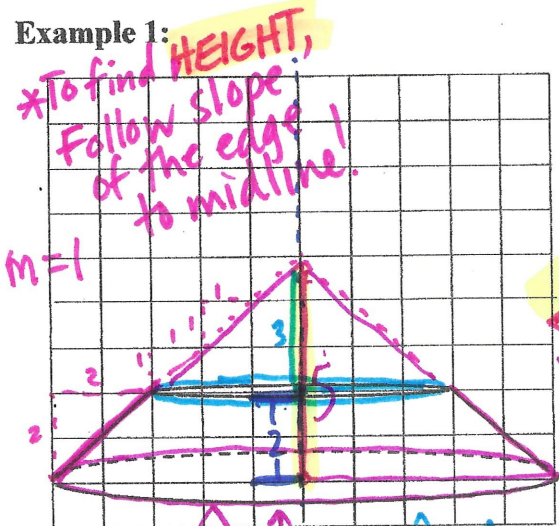
VOLUME OF FRUSTUMS

A frustum is the portion of a cone or pyramid that remains after the upper part has been cut off by a plane that is parallel to the base.
 Another name for a circular frustum is a truncated cone.

To find the volume of the frustum you will need to do a volume subproblem where the frustum's volume will equal the volume of the ORIGINAL cone/pyramid minus the volume of the top cone/pyramid that was removed.

Determine the volume of each frustum.

Example 1:



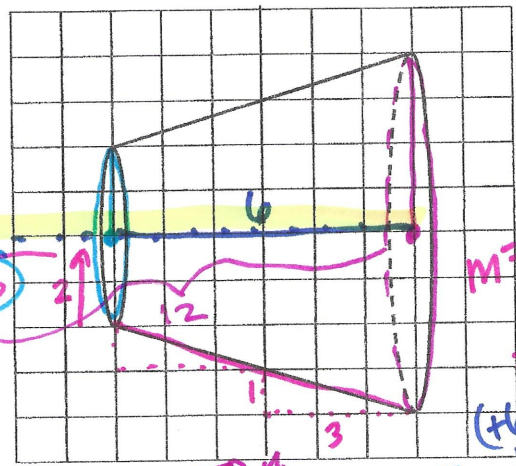
$$\begin{aligned}
 V &= \left(\frac{1}{3} \cdot 5 \cdot 5 \right) - \left(\frac{1}{3} \cdot 3 \cdot 3 \right) \\
 &= \left(\frac{1}{3} \pi \cdot 5^2 \cdot 5 \right) - \left(\frac{1}{3} \pi \cdot 3^2 \cdot 3 \right) \\
 &= \frac{125\pi}{3} - 9\pi
 \end{aligned}$$

$$\begin{aligned}
 V &= \frac{98\pi}{3} u^3 \\
 V &\approx 102.63u^3
 \end{aligned}$$

*Be sure to include EXACT & APPROXIMATE answers!

cubic due to VOLUME which is 3D

Example 2:



$$\begin{aligned}
 V &= \left(\frac{1}{3} \cdot 4 \cdot 12 \right) - \left(\frac{1}{3} \cdot 2 \cdot 6 \right) \\
 &= \left(\frac{1}{3} \pi \cdot 4^2 \cdot 12 \right) - \left(\frac{1}{3} \pi \cdot 2^2 \cdot 6 \right) \\
 &= 64\pi - 8\pi \\
 V &= 56\pi u^3 \\
 V &\approx 175.93u^3
 \end{aligned}$$