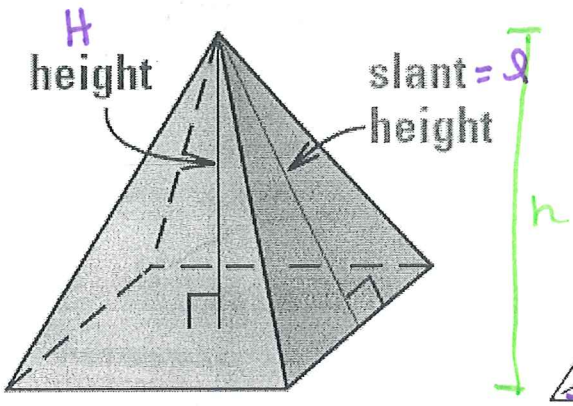
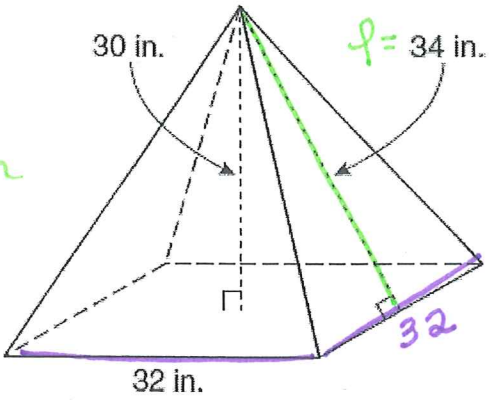
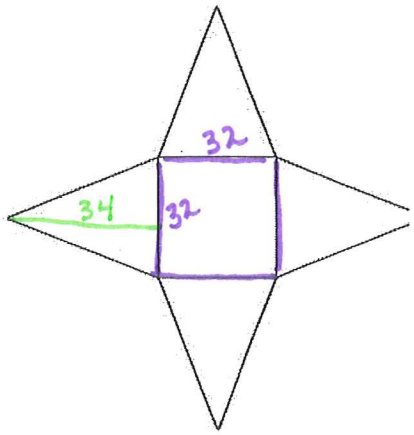
Basic Surface Area and Volume of Pyramids and Cones- Notes



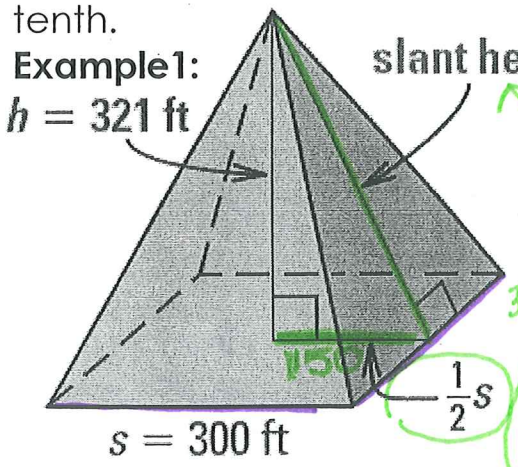




Surface Area:	Lateral Area:	Volume:
all of the faces including the bases	All of the faces except for the base.	$V = \frac{1}{3}B \cdot h$ B = area of the base

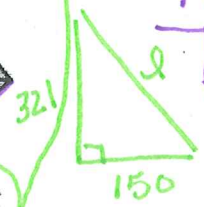
Find the volume and surface area of the solid. Round to the nearest tenth.

Example1:



$SA = 300 \times 300$ (Δs) $4\left(\frac{1}{2} \cdot 300 \times 354.3\right)$

$SA = 302{,}580\ ft^2$



$150^2 + 321^2 = \ell^2$

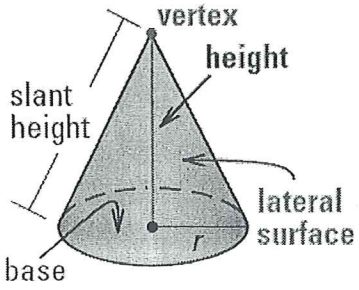
$\ell = 354.3\ ft$

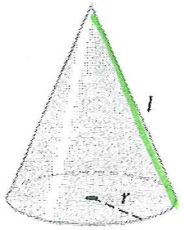
area of square

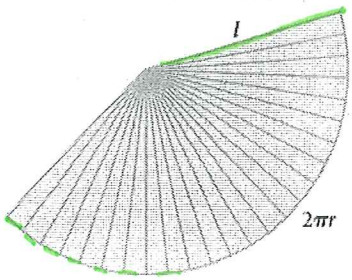
$V = \frac{1}{3}B \cdot H$

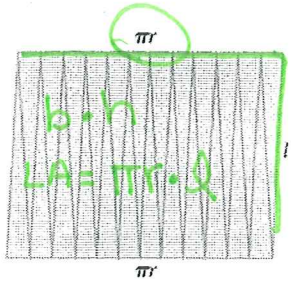
$= \frac{1}{3}(300 \times 300)321$

$V = 9{,}630{,}000\ ft^3$

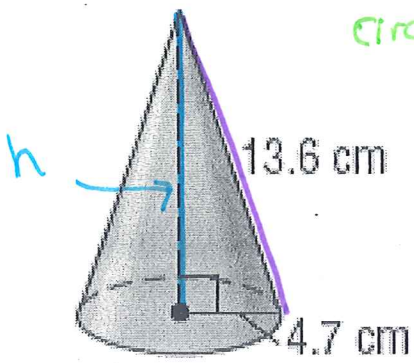








Example 2:
Find the volume and surface area of the solid. Round to the nearest tenth.



circle → $SA = \pi r^2 + \pi r l$ ← LA

$r = 4.7$

$l = 13.6$

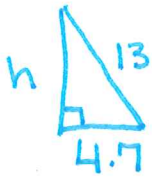
$SA = \pi(4.7)^2 + \pi(4.7)(13.6)$

$SA \approx 270.2\ cm^2$

Volume: $V = \frac{1}{3}B \cdot H$ (B = circle)

$V = \frac{1}{3}(\pi 4.7^2)\,12.8$

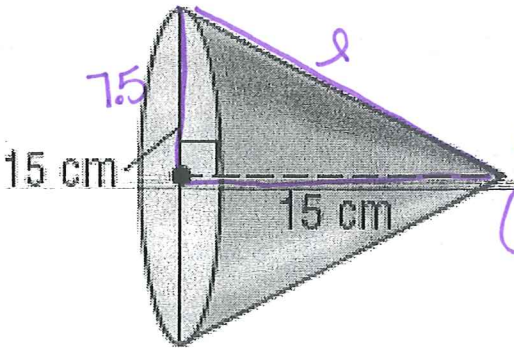
$V = 296.1\ cm^3$



$h^2 + 4.7^2 = 13.6^2$

$h = 12.8$

Example 3:
Find the volume and surface area of the solid. Round to the nearest tenth.



$l^2 = 7.5^2 + 15^2$

$l = 16.8\ cm^2$

$SA = \pi r^2 + \pi r l$

$SA = \pi(7.5)^2 + \pi(7.5)(16.8)$

$SA = 572.6\ cm^2$

$V = \frac{1}{3}B \cdot h$

$V = \frac{1}{3}(\pi(7.5)^2) \times 15$

$V \approx 883.6\ cm^3$