

Math 10 Chp 2 Reference/Review

Note Title

2016-09-29

Copy conversion sheets from chapter 1 if needed
Do conversions with units.

Remember to square the conversion for surface area
and cube the conversion for volume.

So the Total Surface Area for a cone:

$$\begin{aligned} S.A. &= \pi r^2 + \pi r s \\ &= \pi r^2 + \pi r \sqrt{r^2 + h^2} \quad \text{if 's' is not given} \end{aligned}$$

↑ ↓
bottom lateral

Surface area of a sphere (3D, a circle is 2D).

$$S.A. = 4\pi r^2$$

Surface area of a right rectangular pyramid.

Area of base = $b_1 \times b_2$

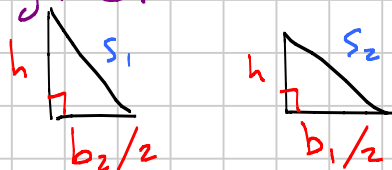
Area of top & bottom triangles = $2 \left[\frac{1}{2} b_1 (s_1) \right] = b_1 s_1$

Area of side triangles = $2 \left[\frac{1}{2} b_2 (s_2) \right] = b_2 s_2$

Total SA = $b_1(b_2) + b_1(s_1) + b_2(s_2)$

If s_1 & s_2 are not given:

$$s_1 = \sqrt{h^2 + \left(\frac{b_2}{2}\right)^2}$$



$$s_2 = \sqrt{h^2 + \left(\frac{b_1}{2}\right)^2}$$

Surface area problems are not simple, you always
need to consider which surfaces need to be included.
Avoid double counting for composite objects.

Volume of sphere = $\frac{4}{3} \pi r^3$

right cone = $\frac{1}{3} \pi r^2 h$

right rectangular pyramid = $\frac{1}{3} b_1 b_2 h$
or $\frac{1}{3} l w h$