Date : ___/___/___

Ex: 27.22

1. Total Volume $= \frac{1}{3}\pi r^2 h + \frac{2}{3}\pi r^3$

$= \frac{1}{3}\pi \times 2.5^2 (10-2.5) + \frac{2}{3}\pi \times 2.5^3$

$= 81.8 cm^3$

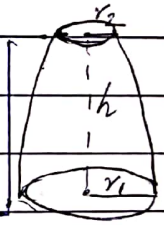
2. Total vol = vol of cylinder + Vol. of cone

$= \pi \times 4^2 \times 12 + \frac{1}{3}\pi \times 4^2 \times 10$

$= 770.8 cm^3$

3.

Volume of frustum cone $= \frac{1}{3}\pi h (r_1^2 + r_2^2 + r_1 r_2)$



Total vol. of the shape $= 2 \times \frac{1}{3}\pi h (r_1^2 + r_2^2 + r_1 r_2)$

$= 2 \times \frac{1}{3}\pi \times 18 (2^2 + 8^2 + 2 \times 8)$

$= 3166.7 cm^3$

Or

original	: Small
8	: 2
$18+x$	x

$8x = 2(18+x)$

$= 36 + 2x$

$6x = 36$

$x = 6$

Height of original Cone $= 18+6$

$= 24 cm$.

Vol of frustated cone = Vol. of original cone − Vol. of small cone

$= \frac{1}{3}\pi \times 8^2 \times 24 - \frac{1}{3}\pi \times 2^2 \times 6$

$= 1588.363\ cm^3$.

Vol. of the shape $= 2 \times 1588.363$

$= 3166.7\ cm^3$

4. a) Vol. of A $= \frac{1}{3}\pi r^2 h$

$= \frac{1}{3}\pi \times 5^2 \times 25$

$= 654.5\ cm^3$.

b) Vol. of B $= \frac{1}{2} \times 654.5$ (Given Vol A : Vol B = 2 : 1)

$= 327.25$

$\frac{1}{3}\pi r^2 h = 327.25$

$\frac{1}{3}\pi \times 5^2 \times h = 327.25$

$h = \frac{3 \times 327.25}{25\pi}$

$= 12.5\ cm$

c) Height of the cylinder $= 25 + 12.5$

$= 37.5\ cm$.

Vol. of the cylinder $= \pi r^2 h$

$= \pi \times 5^2 \times 37.5$

$= 2945.2\ cm^3$