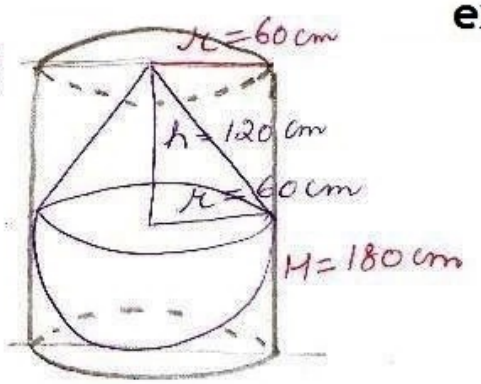
ex. 13.2

(7)



Volume of water left
= vol of cyl − vol of solid
$= \pi r^2 H - \left(\frac{1}{3}\pi r^2 h + \frac{2}{3}\pi r^3\right)$
$= \pi r^2 H - \frac{1}{3}\pi r^2 (h + 2r)$
$= \pi r^2 \left[H - \frac{1}{3}(h + 2r)\right]$
$= \frac{22}{7} \times 60 \times 60 \left[180 - \frac{1}{3}(120 + 120)\right]$
$= \frac{22 \times 3600}{7}\left(180 - \frac{240}{3}\right)$ (80)
$= \frac{22 \times 3600 \times 100}{7}$
$= \frac{7920000}{7}$
$= 1131428.57\ cm^3$
$= 1.131\ m^3$

vol of vessel
= vol of cyl part + vol of sph part
$= \pi r^2 h + \frac{4}{3}\pi R^3$
$= \pi\left(r^2 h + \frac{4}{3}R^3\right)$
$= 3.141\left[1 \times 1 \times 8 + \frac{4}{3} \times \left(\frac{8.5}{2}\right)^3\right]$
$= 3.14\left(8 + \frac{4}{3} \times \frac{8.5 \times 8.5 \times 8.5}{2 \times 2 \times 2}\right)$
$= 3.14\left(8 + \frac{614.125}{3 \times 2}\right)$
$= 3.14\left(\frac{48}{6} + \frac{614.125}{6}\right)$ (48)
$= \frac{3.14 \times 662.125}{3}$
$= \frac{2079.0725}{6}$
$= 346.51\ cm^3$

∴ not correct

(8)