QUESTIONS ON VOLUME AND AREA

Q. 1 Calculate the volume of concrete required to fill a column 400mm x 400mm at the base and 2.75m high.

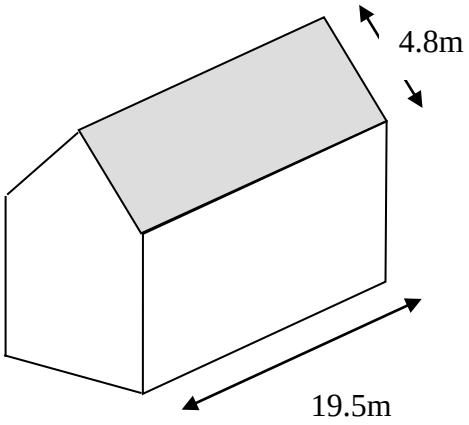
Q. 2 Calculate the volume of concrete required to fill a beam 400mm deep x 300mm wide x 4.1m long

Q. 3 Calculate the volume of a length of timber measuring 112mm x 44mm x 4.8m

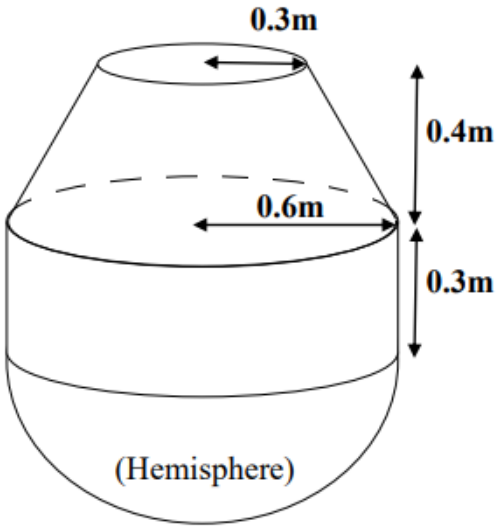
Q. 4 How many metres of 115mm wide flooring are required to cover a floor measuring 4.9m x 3.25m?

Q. 5 Calculate the number of linear metres of floorboards required to cover a floor measuring 3.65m x 2.85m if the boards are 80mm wide.

Q. 6 The length of a ridge board is 19.5m and the common rafter length is 4.8m. Calculate the number of tiles required to cover the roof if one tile covers an area of 300mm x 300 mm.



Q. 7 Calculate the volume of the cement mixer shown below.



QUESTIONS ON VOLUME AND AREA (ANSWERS)

Q. 1 Volume = 2.75 x 0.4 x 0.4 = 0.44m^3

Q. 2 Volume = 4.1 x 0.4 x 0.3 = 0.492m^3

Q. 3 Volume = 4.8 x 0.112 x 0.044 = 0.024m^3

Q. 4 Area = 4.9 x 3.25 = 15.925m^2 / 0.115 = 138.478
= 139m of flooring

Q. 5 Area = 3.65 x 2.85 = 10.4025m^2 / 0.080 = 130.031
= 131m of flooring

Q. 6 Area = 19.5 x 4.8 x 2 = $\underline{187.2m^2}$
Area of tile = 0.3 x 0.3 = 0.09m^2 = 2080 tiles

Q. 7 Vol. Of Frustum = $\frac{1}{3} \pi h (R^2 + R r + r^2)$
= $\frac{1}{3} \times \pi \times 0.4 (0.6^2 + \{ 0.6 \times 0.3 \} + 0.3^2)$ = **0.264m^3**

Vol. Of Cylinder = $\pi r^2 h$
= $\pi \times 0.6^2 \times 0.3$ = **0.339m^3**

Vol. Of Sphere = $\frac{4 \pi r^3}{3} = \frac{4 \times \pi \times 0.6^3}{3} = 0.905^3$

½ sphere $0.905^3 \div 2$ = **0.452m^3**

0.264m^3 + 0.339m^3 + 0.452m^3 = 1.055m^3 Total Volume