MENSURATION
(SURFACE AREA AND VOLUME OF 3D SOLIDS)

1. What is the area of the cardboard needed to make a rectangular box 12cm long. 8cm wide and 6cm high?
2. A small indoor green house (herbarium) is made entirely of glass panes (including base) held together with tape. It is 30cm long, 25 cm wide and 25 cm high.
   i. What is the area of glass?
   ii. How much of tape is needed for all the 12 edges?
3. The length, breadth and height of a box are respectively 12dm, 4 dm and 3 dm. find the length of the greatest rod that can be put in it.
4. A beam 9m long, 50cm wide and 20cm deep is made of wood which weight 30kg per m3, find the weight of the beam.
5. A plastic box 1.5m long, 1.25m wide and 65cm deep is to be made. It is to be opened at the top. Ignoring the thickness of the plastic sheet determine.

i. The area of the sheet required for making the box.
ii. The cost of the sheet required, if a sheet measuring $1m^2$ costs Rs20.

6. Two cubes, each with 12cm edge, are joined end to end. Find the surface area of the resulting cuboid.
7. How many bricks, each 25dm by 15cm by 8 cm are required for a wall 32 m long , 3m high, 40 cm thick?
8. A godown measures 40m x 25m x 10m. Find the maximum number of wooden crates each measuring 1.0m x 1.25 m x 0.5m that can be stored in the godown.
9. A rectangular tank $1\frac{1}{2}$m long, 88cm wide, contains water to a depth of 65 cm. The water is transferred to an empty tank 2m long. 1m wide, find the depth of the water.
10. Find the volume of wood required for making a closed box with external measurements 14cm by 9.5 cm by 6cm, if the wood is 7.5mm thick.
11. A village, having a population of 4000, requires 150 litres of water per head per day. It has a tank measuring 20m x15mx6m. For how many days will the water of this tank last?
12. A river 3m deep and 40m wide is flowing at the rate of km/hr. How much water will fall into the sea in a minute?
13. A plot of land in the form of rectangle has dimensions 25m x 160. A drain 10m side is dug all around it and the earth dug out is evenly spread over the plot increasing its surface level by 40cm. find the depth of the drain.
14. A solid cube of side 12cmis cut into eight cubes of equal volume. What will be the side of the new cube? Also, find the ratio between their surface areas.

15. Find the volume of solid drawn in figure below