Assignment-1

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(7b.) The model of a building is constructed with the scale factor 1:30.

(i) If the height of the model is 30 cm,find the actual height of the building in meters.

Solution:-
Given height of model building = 80cm
Also the given scale factor is 1:30
$\rightarrow$1 : 30 = Model height : Actual height
$\rightarrow$Actual height = Model height$\times$30
$\rightarrow$ Actual height = 80 $\times$30 = 2400cm

(ii) If the actual volume of the tank at the top of the building is$27m^2$**,find the volume of the tank at the top of the model.**

Solution:-
Actual volume of $tank = 27m^2$
and given scale factor is 1 : 30

$\frac{1}{30} = \frac{modelheight}{actualheight}$
$\frac{1}{30} = \frac{modelwidth}{actualwidth}$
$\frac{1}{30} = \frac{modellength}{actuallength}$

as we know that volume = $length \times width \times height$
so,
$\frac{1}{30*30*30} = \frac{modelvolume}{actualvolume}$

model volume = $\frac{actualvolume}{27000}$
model volume = $\frac{27}{27000} = 0.001m^2$
on converting it into centimeter square = 0.001×10^6
volume of model tank = $1000cm^2$