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
→1 : 30 = Model height : Actual height
→Actual height = Model height×30
→ Actual height = 80 ×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

$\frac{1}{30} = \frac{model\ height}{actual\ height}$
$\frac{1}{30} = \frac{model\ width}{actual\ width}$

$\frac{1}{30} = \frac{model\ length}{actual\ length}$

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

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