# 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.**

**(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:-**
**(i)** 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)** 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 = $1000cm^2$