


In two square pyramid of the same volume, the base edge of one is half the base edge of the others. How many times the height of the pyramid with larger base is the height of the other?

 Let the height of first pyramid be ' h_1 ', and second pyramid be ' h_2 '. Base edge of the pyramid be ' a '


$$\frac{1}{3}a^2h_1 = \frac{1}{3}\left(\frac{a}{2}\right)^2 \times h_2$$

$$h_1 = \frac{h_2}{4} \text{ is } 4h_1 = h_2$$

The height of the larger pyramid is 4 times the height of the first pyramid.

Qn. 3

The base edge of two square pyramid are in the ratio 1 : 2 and their heights are in the ratio 1 : 3. The volume of the first pyramid is 180 cubic centimeters. What is the volume of the second?

 Let the base edge be ' a ' and $2a$ heights are ' h ' and $3h$.

$$\frac{1}{3}a^2h = 180$$

$$a^2h = 180 \times 3$$

$$\begin{aligned} \text{Volume of second pyramid} &= \frac{1}{3} \times (2a)^2 \times 3h \\ &= 4a^2h \\ &= 4 \times 3 \times 180 \\ &= 2160 \text{ cu.cm} \end{aligned}$$