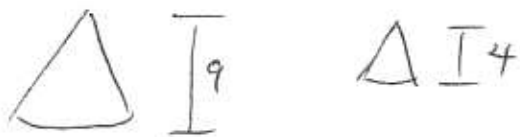


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$$\text{Vol big} = \text{Vol small} = ?$$

Similarity ratio = ratio of lengths

$$\text{Similarity ratio} = 9:4$$

ratio of volumes is the cube of the similarity ratio

$$\text{Vol big} = \text{Vol small} = 9^3 : 4^3$$

$$= 729 : 64$$

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$$SA = 25\pi \text{ cm}^2$$



$$SA = 49\pi \text{ cm}^2$$

a)

What is the similarity ratio?

OR

Ratio of areas = square of similarity ratio

$$25\pi = 49\pi = (\text{similarity ratio})^2$$

$$25 = 49 = (\text{similarity ratio})^2$$

$$5:7 = \text{similarity ratio} \quad (\text{square roots of both sides})$$

$$\frac{A_{\text{small}}}{A_{\text{big}}} = \frac{a^2}{b^2}$$

$$\frac{25\pi}{49\pi} = \frac{a^2}{b^2}$$

$$\frac{25}{49} = \frac{a^2}{b^2}$$

$$\frac{5}{7} = \frac{a}{b}$$

$$5:7$$

b)

$$\frac{V_{\text{small}}}{V_{\text{big}}} = \frac{a^3}{b^3} = \frac{5^3}{7^3}$$

$$V_{\text{small}} = 50\pi$$

$$\frac{50\pi}{V_{\text{big}}} = \frac{5^3}{7^3}$$

cross mult. & solve