

$$4. a) \begin{array}{r} \sqrt[4]{16} \\ \sqrt[4]{2 \cdot 2 \cdot 2 \cdot 2} \end{array}$$

2

$$b) \sqrt[3]{64}$$

$$\sqrt[3]{(2 \cdot 2 \cdot 2)(2 \cdot 2 \cdot 2)}$$

$$2 \times 2$$

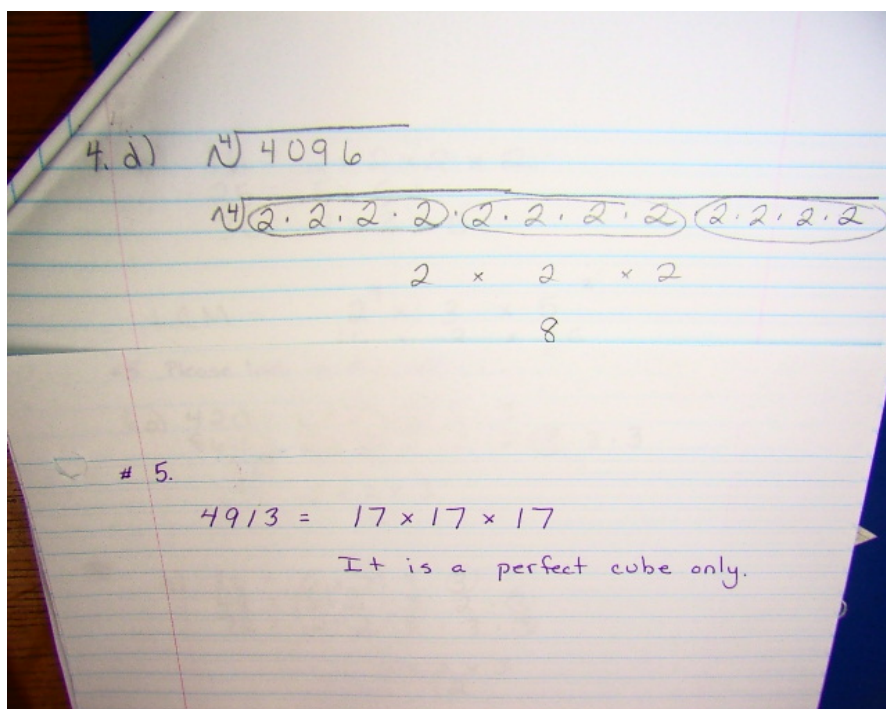
4

$$c) \sqrt[3]{8000}$$

$$\sqrt[3]{2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 \cdot 5 \cdot 5 \cdot 5}$$

$$2 \cdot 2 \cdot 5$$

20



$$\begin{aligned} 6. a) \quad 420 &= 2 \cdot 2 \cdot 3 \cdot 5 \cdot 7 \\ 864 &= 2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 \cdot 3 \cdot 3 \cdot 3 \\ &2 \times 2 \times 3 \\ &12 \end{aligned}$$


$$\begin{aligned} b) \quad 36 &= 2 \times 2 \cdot 3 \cdot 3 \\ 48 &= 2 \cdot 2 \cdot 2 \cdot 2 \cdot 3 \\ 72 &= 2 \cdot 2 \cdot 2 \cdot 3 \cdot 3 \\ &2 \times 2 \times 3 \\ &12 \end{aligned}$$

$$\begin{aligned} 7. a) \quad 12 &= 2 \times 2 \times 3 \\ 40 &= 2 \times 2 \times 2 \times 5 \end{aligned}$$

$$\begin{aligned} \text{LCM} &= 2^3 \times 3 \times 5 \\ &= 8 \times 3 \times 5 \\ &= 120 \end{aligned}$$

$$\begin{aligned} 7. b) \quad 16 &= 2 \times 2 \times 2 \times 2 \\ 25 &= 5 \times 5 \\ 30 &= 2 \times 3 \times 5 \end{aligned}$$

$$\begin{aligned} \text{LCM} &= \frac{2^4 \times 3 \times 5^2}{16 \times 3 \times 25} \\ &= 1200 \end{aligned}$$

8.  $V = 74088 \text{ cm}^3$
 $\sqrt[3]{74088}$

$$\begin{aligned} \text{SA} &= L \times W \\ &= 42 \times 42 \\ &= 1764 \\ &\quad \times 6 \text{ sides.} \\ &= 10584 \text{ cm}^2 \end{aligned}$$

$$9. \frac{5400 \text{ cm}^2}{6}$$

$$900 \text{ cm}^2$$

$$\begin{aligned} \sqrt{900} &= \sqrt{2 \times 2 \times 5 \times 5 \times 3 \times 3} \\ &= 2 \times 5 \times 3 \\ &= 30 \end{aligned}$$

$$\begin{aligned} V &= L \times W \times H \\ &= 30 \times 30 \times 30 \\ &= 27000 \end{aligned}$$

$$10. \quad \begin{aligned} 48 &= 2 \times 2 \times 2 \times 2 \times 3 \\ 60 &= 2 \times 2 \times 3 \times 5 \\ 84 &= 2 \times 2 \times 3 \times 7 \end{aligned}$$

$$\frac{2 \times 2 \times 3}{12}$$

$$11. \quad a) \quad \begin{array}{r} 4 \overline{) 12} \\ \underline{12} \\ 0 \end{array}$$

$$\sqrt{12 \times 4 \times 4}$$

$$\sqrt{192}$$

$$b) \quad \begin{array}{r} 5 \overline{) 25} \\ \underline{25} \\ 0 \end{array}$$

$$\sqrt{5 \times 5 \times 5}$$

$$\sqrt{125}$$

$$11. a) 4 \sqrt[3]{12}$$

$$\sqrt[3]{12 \times 4 \times 4}$$

$$\sqrt[3]{192}$$

$$b) 5 \sqrt[3]{5}$$
$$\sqrt[3]{5 \times 5 \times 5}$$
$$\sqrt[3]{125}$$

$$c) 7 \sqrt[3]{11}$$

$$\sqrt[3]{11 \times 7 \times 7 \times 7}$$
$$\sqrt[3]{3773}$$

$$d) 3 \sqrt[3]{10}$$

$$\sqrt[3]{10 \times 3 \times 3 \times 3 \times 3 \times 3}$$

$$\sqrt[3]{2430}$$

$$\begin{array}{l} 12. a) \quad \sqrt[4]{243} \\ \quad \quad \sqrt[4]{\underbrace{3 \times 3 \times 3 \times 3} \times 3} \\ \quad \quad 3 \sqrt[4]{3} \end{array}$$

$$\begin{array}{l} b) \quad 5 \sqrt[3]{48} \\ \quad \quad 5 \sqrt[3]{\underbrace{2 \times 2 \times 2} \times 2 \times 3} \\ \quad \quad 10 \sqrt[3]{6} \end{array}$$

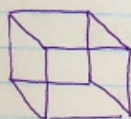
$$\begin{array}{l} c) \quad \sqrt[3]{1080} \\ \quad \quad \sqrt[3]{\underbrace{2 \times 2 \times 2} \times \underbrace{3 \times 3 \times 3} \times 5} \\ \quad \quad 6 \sqrt[3]{5} \end{array}$$

$$12.d) \sqrt[5]{2592}$$

$$\sqrt[5]{\underbrace{2 \times 2 \times 2 \times 2 \times 2}_{2^5} \times 3 \times 3 \times 3 \times 3}$$

$$2 \sqrt[5]{81}$$

13.



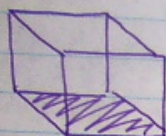
$$V = 1080 \text{ cm}^3$$

$$\sqrt[3]{1080}$$

$$\sqrt[3]{\underbrace{2 \times 2 \times 2}_{2^3} \times \underbrace{3 \times 3 \times 3}_{3^3} \times 5}$$

$$6 \sqrt[3]{5}$$

14.



$$SA = 37800 \text{ cm}^2$$

Area of One Side $\rightarrow \frac{37800}{6} = 6300 \text{ cm}^2$

$$\sqrt{6300}$$

$$\sqrt{2 \times 2 \times 3 \times 3 \times 5 \times 5 \times 7}$$

$$30\sqrt{7}$$

15.

"small Δ "

$$c^2 = a^2 + b^2$$

$$c^2 = 6^2 + 4^2$$

$$c^2 = 36 + 16$$

$$c^2 = 52$$

$$c = \sqrt{52}$$

$$= \sqrt{2 \times 2 \times 13}$$

$$= 2\sqrt{13}$$

"Large Δ "

$$c^2 = a^2 + b^2$$

$$c^2 = 18^2 + 12^2$$

$$c^2 = 324 + 144$$

$$c^2 = 468$$

$$c = \sqrt{468}$$

$$c = \sqrt{2 \times 2 \times 3 \times 3 \times 13}$$

$$= 6\sqrt{13}$$