

$$\textcircled{3} \text{ c) } \sqrt[4]{\frac{256}{625}}$$

$$\text{Radikand} = \frac{256}{625}$$

$$\frac{\sqrt[4]{256}}{\sqrt[4]{625}} = \frac{\sqrt[4]{2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2}}{\sqrt[4]{5 \times 5 \times 5 \times 5}}$$

$$= \frac{2 \times 2}{5} = \left(\frac{4}{5}\right)$$

(12) b)  $5^3\sqrt{48}$

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

$5 \cdot 2^3\sqrt{2 \times 3}$

$10^3\sqrt{6}$

⑭ Surface Area of a cube is  $37800\text{cm}^2$ .  
What is the length?

① Find Area

$$A = \frac{37800}{6}$$

$$A = 6300\text{cm}^2$$

$$\boxed{A = 6300} \quad l = ?$$

② Find length *square root → circle pairs*

$$\sqrt{6300} = \sqrt{2 \times 2 \times 3 \times 3 \times 5 \times 5 \times 7}$$

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

$$l = 30\sqrt{7}$$

$$\boxed{l = 30\sqrt{7}\text{cm}}$$

- ⑥ Given:  
 Surface Area =  $13824 \text{ m}^2$   
 Volume = ?

Square:  
 $A = l \times w$  (sides are same)

Cube:  
 $V = l \times w \times h$  (sides are same)  
 $SA = 6(l \times w)$  (sides are same)

- ① Find Area.

$$\text{Area} = \frac{\text{S.A.}}{6}$$

$$\text{Area} = \frac{13824}{6}$$

$$A = 2304 \text{ m}^2$$

- ② Find side length

$$l = \sqrt{2304}$$

$$l = \sqrt{2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 3 \times 3}$$

$$l = 2 \times 2 \times 2 \times 2 \times 3$$

$$l = 48 \text{ m}$$

$$\text{length} = 48 \text{ m}$$

- ③  $V = l \times w \times h$  (All sides are the same)

$$V = 48 \times 48 \times 48$$

$$V = 110592 \text{ m}^3$$

$$A = l \times w$$

$$\underline{\underline{V = l \times w \times h}}$$

Given surface Area = 17496 units<sup>2</sup>

- ① Find Area:      ② Find length

$$A = \frac{17496}{6}$$

$$A = 2916 \text{ units}^2$$

$$l = \sqrt{2916}$$

$$l = \sqrt{2 \times 2 \times 3 \times 3 \times 3 \times 3 \times 3 \times 3}$$

$$l = 2 \times 3 \times 3 \times 3$$

$$l = 54$$

$$\text{length} = 54 \text{ units}$$

③  $V = l \times w \times h$

$$V = 54 \times 54 \times 54$$

$$V = 157\,464 \text{ units}^3$$

Review for test:

$$\textcircled{1} \quad 35700 = 2 \cdot 2 \cdot 3 \cdot 5 \cdot 5 \cdot 7 \cdot 17$$
$$\boxed{= 2^2 \cdot 3 \cdot 5^2 \cdot 7 \cdot 17}$$

$$\textcircled{2} \quad 735 = 3 \cdot 5 \cdot 7 \cdot 7$$
$$1715 = 5 \cdot 7 \cdot 7 \cdot 7$$

$$\text{GCF} = 5 \cdot 7 \cdot 7$$

$$\boxed{\text{GCF} = 245}$$

Review for test:

$$\textcircled{3} \quad 450 = 2 \cdot 3 \cdot 3 \cdot 5 \cdot 5 \rightarrow 2 \cdot \textcircled{3^2} \cdot \textcircled{5^2}$$

$$180 = 2 \cdot 2 \cdot 3 \cdot 3 \cdot 5 \rightarrow \textcircled{2^2} \cdot 3^2 \cdot 5$$

$$\text{LCM} = 2^2 \cdot 3^2 \cdot 5^2$$

$$\text{LCM} = 4 \cdot 9 \cdot 25$$

$$\boxed{\text{LCM} = 900}$$

$$\textcircled{4} \quad 9 = \textcircled{3} \cdot 3$$

$$15 = \textcircled{3} \cdot 5$$

$$\boxed{\text{GCF} = 3 \text{ft}}$$

Review for test:

$$\textcircled{5} \quad 8 = 2 \cdot 2 \cdot 2 \rightarrow 2^3 \quad \text{LCM} = 2^3 \cdot 7$$

$$14 = 2 \cdot 7 \rightarrow 2 \cdot 7 \quad \text{LCM} = 8 \cdot 7$$

$$\boxed{\text{LCM} = 56 \text{ days}}$$

$$\textcircled{6} \quad \text{Volume} = 9261 \text{ in}^3$$

(i) Find length:

$$l = \sqrt[3]{9261}$$

$$l = \sqrt[3]{\underline{3 \cdot 3 \cdot 3} \cdot \underline{7 \cdot 7 \cdot 7}}$$

$$l = 3 \cdot 7$$

$$l = \underline{21} \text{ in}$$

(ii) Find Area of 1 face:

$$A = l \times w$$

$$A = 21 \times 21$$

$$\boxed{A = 441 \text{ in}^2}$$



Review for test:

⑦ Surface Area =  $1944 \text{ cm}^2$

(i) Find Area:

$$\text{Area} = \frac{\text{Surface Area}}{6}$$

$$\text{Area} = \frac{1944}{6}$$

$$\text{Area} = 324 \text{ cm}^2$$

(ii) Find length:

$$l = \sqrt{324}$$

$$l = \sqrt{2 \cdot 2 \cdot 3 \cdot 3 \cdot 3 \cdot 3}$$

$$l = 2 \cdot 3 \cdot 3$$

$$l = 18 \text{ cm}$$

(iii) Find Volume

$$V = l \times w \times h$$

$$V = 18 \times 18 \times 18$$

$$V = 5832 \text{ cm}^3$$

⑩ Volume =  $23625 \text{ m}^3$

(i) Find length:

$$l = \sqrt[3]{23625}$$

$$l = \sqrt[3]{3 \cdot 3 \cdot 3 \cdot 5 \cdot 5 \cdot 5 \cdot 7}$$

$$l = 3 \cdot 5 \sqrt[3]{7}$$

$$l = 15 \sqrt[3]{7} \text{ m}$$

Review for test:

$$\textcircled{11} \quad 8\sqrt{19}$$

$$= \sqrt{8 \cdot 8 \cdot 19}$$

$$= \sqrt{1216}$$

$$\textcircled{12} \quad \sqrt[5]{28125}$$

$$= \sqrt[5]{\underline{5 \cdot 5 \cdot 5 \cdot 5 \cdot 5} \cdot 9}$$

$$= 5\sqrt[5]{9}$$

$$\textcircled{13} \quad 40 = 2 \cdot 2 \cdot 2 \cdot 5 \rightarrow 2^3 \cdot 5$$

$$50 = 2 \cdot 5 \cdot 5 \rightarrow 2 \cdot 5^2$$

$$\text{LCM} = 2^3 \cdot 5^2$$

$$\text{LCM} = 8 \cdot 25$$

$$\text{LCM} = 200 \text{ s}$$

$$\textcircled{14} \quad \begin{array}{l} 32 = 2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 \\ 80 = 2 \cdot 2 \cdot 2 \cdot 2 \cdot 5 \end{array}$$

$$\text{GCF} = 2 \cdot 2 \cdot 2 \cdot 2$$

$$\text{GCF} = 16 \text{ cm}$$

Review for test:

⑮ Surface Area =  $2646\text{m}^2$

(i) Find Area:

$$\text{Area} = \frac{\text{Surface Area}}{6}$$

$$\text{Area} = \frac{2646}{6}$$

$$\text{Area} = 441\text{m}^2$$

(ii) Find length:

$$l = \sqrt{441}$$

$$l = \sqrt{3 \cdot 3 \cdot 7 \cdot 7}$$

$$l = 3 \cdot 7$$

$$l = 21\text{m}$$

(iii) Find Volume:

$$V = l \times w \times h$$

$$V = 21 \times 21 \times 21$$

$$V = 9261\text{m}^3$$

⑯  $\frac{4}{9} = \frac{\sqrt{16}}{\sqrt{81}} = \boxed{\frac{\sqrt{16}}{\sqrt{81}}}$

⑰  $4913 = 17 \cdot 17 \cdot 17$   
 perfect cube