

$$\#1. \quad \frac{4}{9} = \sqrt{\frac{16}{81}}$$

$$\#4. \quad (a) \sqrt{56} \qquad (b) \sqrt[3]{6000}$$

$$= \sqrt{2 \times 2 \times 2 \times 7}$$
$$= 2\sqrt{14}$$

$$= \sqrt[3]{2 \times 2 \times 2 \times 2 \times 3 \times 5 \times 5 \times 5}$$
$$= 2 \times 5 \sqrt[3]{2 \times 3}$$
$$= 10 \sqrt[3]{6}$$

$$(c) \quad \sqrt[5]{64}$$

$$= \sqrt[5]{2 \times 2 \times 2 \times 2 \times 2 \times 2}$$
$$= 2 \sqrt[5]{2}$$

$$(d) \quad \sqrt{48}$$

$$= \sqrt{2 \times 2 \times 2 \times 2 \times 3}$$
$$= 2 \times 2 \sqrt{3}$$
$$= 4\sqrt{3}$$

#5. a) $4\sqrt{3}$

Already Entire

b) $4^2\sqrt{10}$

$$= \sqrt{10 \times 4 \times 4}$$

$$= \sqrt{160}$$

c) $-2\sqrt{14}$

$$= -\sqrt{14 \times 2 \times 2}$$

$$= -\sqrt{56}$$

(d) $5^3\sqrt{8}$

$$= \sqrt[3]{8 \times 5 \times 5 \times 5}$$

$$= \sqrt[3]{1000}$$

#6.

$$\text{Volume} = 23625.$$

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

↙ same ↙ same ↙ same.

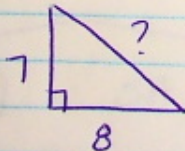
$$\sqrt[3]{23625}$$

$$= \sqrt[3]{3 \times 3 \times 3 \times 5 \times 5 \times 5 \times 7}$$

$$= 3 \times 5 \sqrt[3]{7}$$

$$= 15 \sqrt[3]{7}$$

#7.



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

$$7^2 + 8^2 = c^2.$$

$$49 + 64 = c^2$$

$$\sqrt{113} = \sqrt{c^2}.$$

$$c = \sqrt{113}.$$

#8. a) Small

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

$$1^2 + 3^2 = c^2$$

$$1 + 9 = c^2$$

$$\sqrt{10} = \sqrt{c^2}$$

$$c = \sqrt{10}$$

Large

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

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

$$36 + 4 = c^2$$

$$\sqrt{40} = \sqrt{c^2}$$

$$c = \sqrt{40}$$

Ratio

2 to 1

therefore

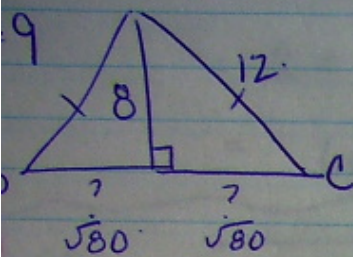
$$2\sqrt{10} = \sqrt{40}$$

b)

$$\sqrt{40} = 2\sqrt{10}$$

$$\sqrt{40} = \sqrt{10 \times 2 \times 2}$$

$$\sqrt{40} = \sqrt{40}$$



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

$$8^2 + b^2 = 12^2$$

$$64 + b^2 = 144$$

$$b^2 = 144 - 64$$

$$\sqrt{b^2} = \sqrt{80}$$

$$b = \sqrt{80} \times 2$$

$$= 2\sqrt{80}$$

#10. a) SA = 5400

$$5400 \div 6 = 900$$

$$\sqrt{900} = \sqrt{2 \times 2 \times 3 \times 3 \times 5 \times 5}$$

$$= 2 \times 3 \times 5$$

$$= 30$$

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

$$V = 30 \times 30 \times 30$$

$$V = 27000 \text{ cm}^3$$

$$= 2 \times 2 \times 3 \times 5$$

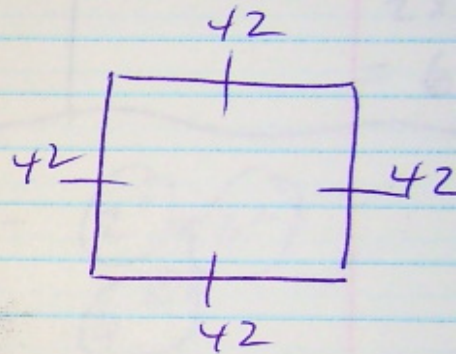
$$= 60$$

(d) $\sqrt{1764}$

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

$$= 2 \times 3 \times 7$$

$$= 42$$



$$\begin{aligned} \text{Perimeter} &= 42 + 42 + 42 + 42 \\ &= 168 \text{ cm.} \end{aligned}$$

11.

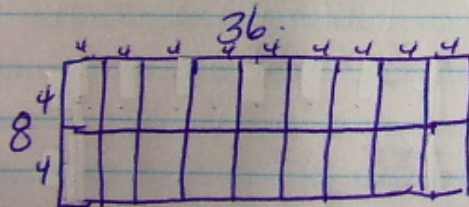
$$8 \rightarrow 2 \times 2 \times 2 = 2^3$$

$$14 \rightarrow 2 \times 7 = 2^1 \times 7^1$$

$$2^3 \times 7^1$$

$$8 \times 7 = \underline{\underline{56 \text{ days}}}$$

12.



GCF

$$8 \rightarrow 2 \times 2 \times 2$$

$$36 \rightarrow 2 \times 2 \times 3 \times 3$$

$$2 \times 2 = 4$$

$$2 \times 2 = 4$$

$$\#13. \text{ a) } 220 - 2 \times 2 \times 5 \times 11$$

$$484 - 2 \times 2 \times 11 \times 11$$

$$988 - 2 \times 2 \times 13 \times 19.$$

$$2 \times 2 = 4$$

$$\text{(b) } 126 - 2 \times 3 \times 3 \times 7$$

$$546 - 2 \times 3 \times 7 \times 13$$

$$714 - 2 \times 3 \times 7 \times 17$$

$$2 \times 3 \times 7$$

$$= 42$$

$$\#14. \text{ a) } 18 \rightarrow 2 \times 3 \times 3. - 2^1 \times 3^2$$

$$25 \rightarrow 5 \times 5 - 5^2$$

$$30 \rightarrow 2 \times 3 \times 5 - 2^1 \times 3^1 \times 5^1$$

$$2^1 \times 3^2 \times 5^2.$$

$$2 \times 9 \times 25$$

$$= 450$$