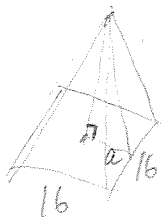
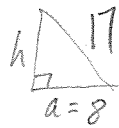
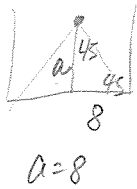


# Pyramids Practice #2 KEY

①



$$V = \frac{1}{3} B h$$



$$h^2 + 8^2 = 256$$

$$h^2 = 225$$

$$h = 15$$

$$B = 16^2 = 256$$

$$V = \frac{1}{3} 256 (15)$$

$$= \frac{1}{3} (3840)$$

$$= \boxed{1280}$$

②

$$V = \frac{1}{3} B h$$

$$48 = \frac{1}{3} (14) h$$

$$\frac{24 \cdot 48}{1 \cdot 14} = h \rightarrow \boxed{h = \frac{72}{7}}$$

$$\textcircled{3} V = \frac{1}{3} B h \rightarrow \frac{S^2 \sqrt{3}}{4}$$

$$2500 = \frac{1}{3} \frac{15^2 \sqrt{3}}{4} h$$

$$4(7500) = 225 \sqrt{3} h$$

$$h = \frac{4(7500)}{225 \sqrt{3}} = \frac{4(300)}{9 \sqrt{3}} = \frac{400}{3 \sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}} = \boxed{\frac{400 \sqrt{3}}{9}}$$

④

$$b = 6, LA = 198$$

$$LA = \frac{1}{2} p l$$

$$198 = \frac{1}{2} 36 l$$

$$\frac{198}{18} = l$$

$$l = 11$$

$$V = \frac{1}{3} B h$$

$$= \frac{1}{3} 54 \sqrt{3} \sqrt{14}$$

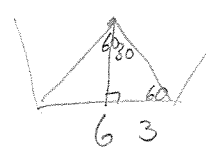
$$\boxed{V = 18 \sqrt{282}}$$

$$B = \frac{1}{2} a p$$

$$B = \frac{1}{2} 3 \sqrt{3} 36$$

$$B = 54 \sqrt{3}$$

$$a = ? 3 \sqrt{3}$$

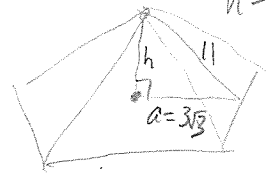


$$h^2 + (3 \sqrt{3})^2 = 11^2$$

$$h^2 = 121 - 27$$

$$h = \sqrt{94}$$

$$h = ?$$



⑤

$$\frac{1}{3} B h = \frac{1}{3} B h$$

$$\frac{1}{3} \frac{S^2 \sqrt{3}}{4} h = \frac{1}{3} \frac{S^2 \sqrt{3}}{4} h$$

$$\frac{1}{3} \frac{9 \sqrt{3}}{4} h = \frac{1}{3} \frac{4 \sqrt{3}}{4} h$$

$$\boxed{9:4} \text{ or } 2\frac{1}{4} \times$$

⑥

$$V = \frac{1}{3} B h$$

$$= \frac{1}{3} 24 (14)$$

$$= \boxed{112}$$

$$B = \frac{1}{2} d_1 d_2$$

$$= \frac{1}{2} 6 (8) = 24$$

The pyramid with side of 3 is  $2\frac{1}{4}$  times greater in volume than the other.

# 12.2 - Pyramids

- ⑦ Rectangular  $5 \times 8$       square  $6^2$   
 $B=40$                                $B=36$

$$\frac{1}{3} 40h = \frac{1}{3} 36h$$

$$\frac{40}{3} h = 12h$$

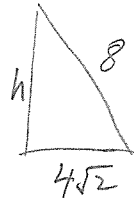
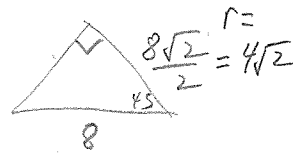
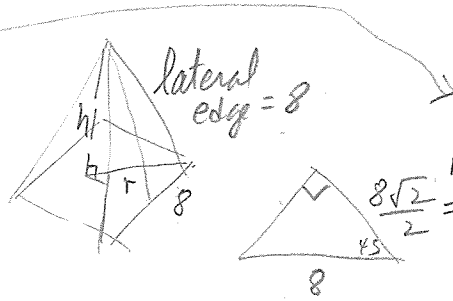
$$\frac{10}{9} = \frac{40}{36} h = 1h$$

The ht of the rectangular pyramid is  $\frac{10}{9}$  times that of the sq. pyramid.

- ⑧  $S=8$

$$V = \frac{1}{3} B h \rightarrow B = S^2 = 64$$

$$\frac{1}{3} \cdot 64 (4\sqrt{2})$$



$$h^2 + (4\sqrt{2})^2 = 8^2$$

$$h^2 = 64 - 32$$

$$h = \sqrt{32} = 4\sqrt{2}$$

$$\boxed{\frac{256\sqrt{6}}{3}}$$

⑨  $TA = LA + B$   
 $70 + S^2$   
 $70 + 25$   
 $\boxed{95 \text{ sq}}$

$l = ?$   
 $LA = \frac{1}{2} pl$   
 $70 = \frac{1}{2} p \cdot 7$   
 $20 = p$   
 $5 = e$

⑩  $TA = \frac{1}{2} pl + B$   
 $48 = \frac{1}{2} 4l^2 + B$   
 $48 = 2l^2 + l^2$   
 $16 = l^2$   
 $4 = l$

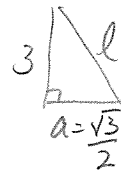
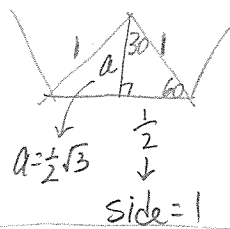
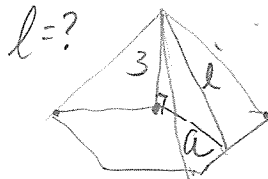
$e = l$   
 $p = 4e$   
 $p = 4l$   
 $\left. \begin{matrix} A = e^2 \\ A = 16 \end{matrix} \right\}$

- ⑩  $TA = LA$

$$= \frac{1}{2} pl$$

$$= \frac{1}{2} (6) \left( \frac{\sqrt{39}}{2} \right)$$

$$TA = \boxed{\frac{3\sqrt{39}}{2}}$$



$$9 + \left( \frac{\sqrt{3}}{2} \right)^2 = l^2$$

$$9 + \frac{3}{4} = l^2$$

$$l = \frac{\sqrt{39}}{2}$$

$$2TA = 3\sqrt{39} \text{ per container} \times 100 = 300\sqrt{39} \approx \frac{1873.4994}{450} \approx 4.16$$

5 gallons