

NAME

Ms. Kresovic

Adv Geo -

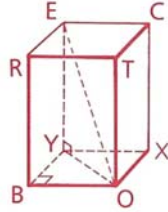
Mon 18 Mar 13

9.8: The Pythagorean Theorem and Space Figures

9.8: 413/1-6, 11-15

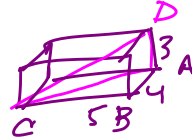
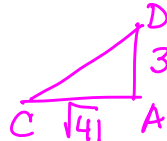
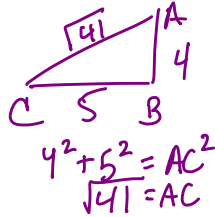
- 1 Given: The rectangular solid shown,
BY = 3, OB = 4, EY = 12

Find: a YO, a diagonal of face BOXY 5
b EO, a diagonal of the solid 13



- 2 Find the diagonal of a rectangular solid whose dimensions are 3, 4, and 5.

$5\sqrt{2}$

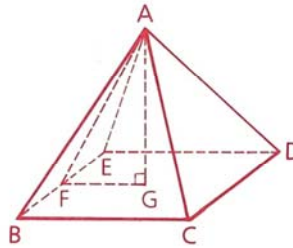


- 3 Given: Regular square pyramid ABCDE,
with slant height $\overline{AF}$, altitude $\overline{AG}$,
and base BCDE;
perimeter of BCDE = 40,
 $\angle AFG = 60^\circ$

Find: The altitude and the slant height

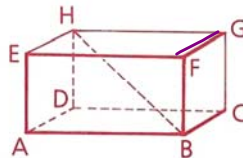
$5\sqrt{3}$

10

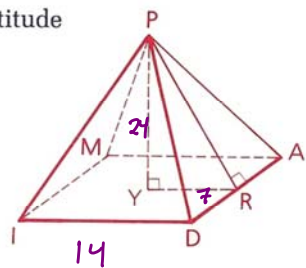


- 4 Given: The rectangular solid shown,
GC = 8, HG = 12, BC = 9

Find: a HB, a diagonal of the solid 17
b AG, another diagonal of the solid 17

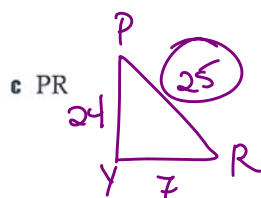


- 5 Given: The regular square pyramid shown, with altitude $\overline{PY}$ and slant height $\overline{PR}$,
 $ID = 14$, $PY = 24$



Find: a $AD = ID = 14$
 square $\Rightarrow \cong$ sides

b $YR = \frac{1}{2}ID = 7$

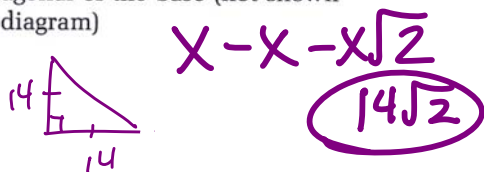


- d The perimeter of base AMID

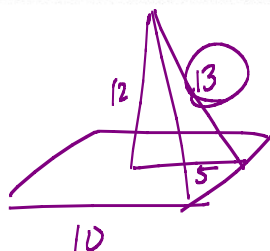
$$4(ID) = 4(14) = 40 + 16 = 56$$

$$4(10+4)$$

- e A diagonal of the base (not shown in the diagram)



- 6 Find the slant height of a regular square pyramid if the altitude is 12 and one of the sides of the square base is 10.

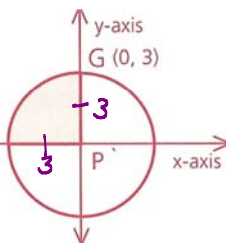


11 Given: $\odot P$ as shown

Find: a The coordinates of point E $(-3, 0)$

b The area of sector EPG to the nearest tenth $\frac{90}{360}(A_{\odot}) = \frac{1}{4} \pi 3^2 = \frac{9}{4} \pi$

c The length of $\widehat{GE}$ to the nearest tenth $\frac{90}{360}(P_{\odot}) = \frac{1}{4} \pi d = \frac{6}{4} \pi = \frac{3}{2} \pi$

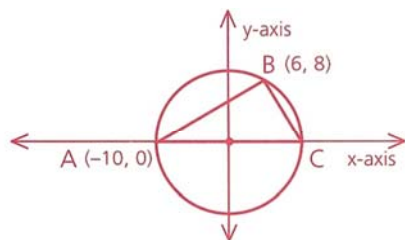


12 Given: Diagram as marked

Find: AB (the length of $\overline{AB}$)

$$BC^2 + AB^2 = AC^2$$

$$\begin{aligned} \text{Dist} &= \sqrt{\Delta x^2 + \Delta y^2} \\ &= \sqrt{(-10 - 6)^2 + (0 - 8)^2} \\ &= \sqrt{256 + 64} \\ &= \sqrt{320} \\ &= \sqrt{4 \cdot 4 \cdot 2 \cdot 2 \cdot 5} \\ &= 8\sqrt{5} \end{aligned}$$

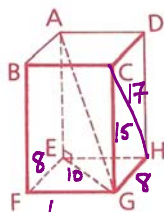


$$\begin{array}{c} 320 \\ \swarrow \quad \searrow \\ 8 \quad 40 \\ \swarrow \quad \searrow \quad \swarrow \quad \searrow \\ 4 \quad 2 \quad 4 \quad 10 \end{array}$$

13 ABCDEFGH is a rectangular solid.

a If face diagonal $\overline{CH}$ measures 17, edge $\overline{GH}$ measures 8, and edge $\overline{FG}$ measures 6, how long is diagonal $\overline{AG}$?

b If diagonal $\overline{AG}$ measures 50, edge $\overline{AE}$ measures 40, and edge $\overline{EF}$ measures 3, how long is edge $\overline{FG}$?



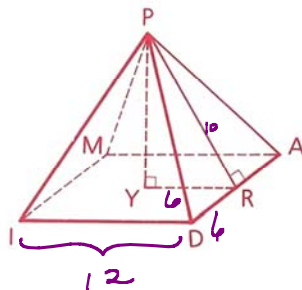
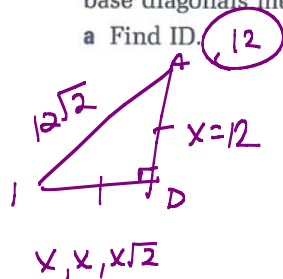
$$\begin{array}{c} E \\ 4 \cdot 2 = 8 \quad 5 \cdot 2 = 10 \\ F \quad 6 = G \\ 3 \cdot 2 \end{array}$$

$$\begin{array}{c} A \\ 3 \cdot 5 \quad 5\sqrt{13} \\ E \quad 10 \quad G \\ 2 \cdot 5 \end{array}$$

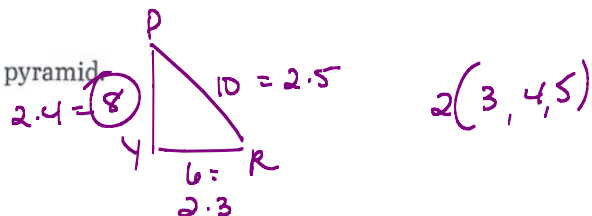
$$\begin{aligned} &5(2, 3, \text{---}) \\ &5(2^2 + 3^2 = 13) \end{aligned}$$

- 14 PADIM is a regular square pyramid.
Slant height $\overline{PR}$ measures 10, and the
base diagonals measure $12\sqrt{2}$.

a Find ID.

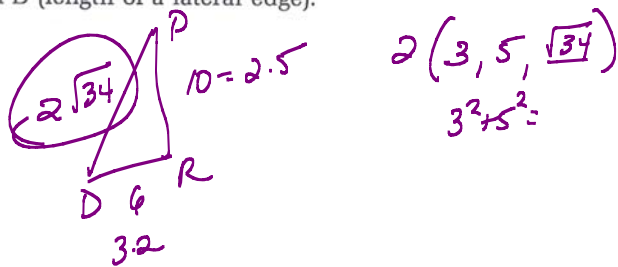


b Find the altitude of the pyramid.



c Find RD. $= \frac{1}{2} ID = 6$

d Find PD (length of a lateral edge).



- 15 Find the diagonal of a cube if each edge is 2.

