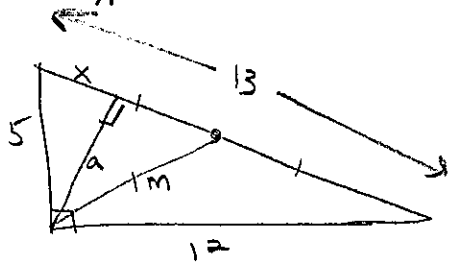
Key

Honors Geometry – Ms. Coakley
Ch8 Quiz Review – Harder Problems

1. A right triangle has legs of 5 and 12. Find the length of median and altitude to its hypotenuse.



$5^2 + 12^2 = h^2$

$13 = h$

$m = 6.5$

$\frac{x}{5} = \frac{5}{13}$

$25 = 13x$

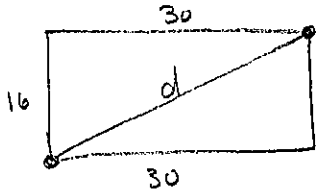
$\frac{25}{13} = x$

$\left(\frac{25}{13}\right)^2 + a^2 = 5^2$

$a^2 \approx 21.3$

$a \approx 4.6$

2. Angela took a shortcut by walking along the diagonal of a 30m by 16m rectangular field. How much farther would she have had to walk if she had walked along the edge of the field?



$30^2 + 16^2 = d^2$

$1156 = d^2$

$34 = d$

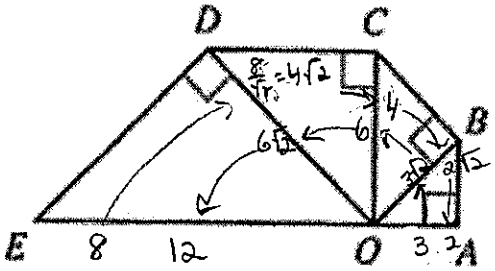
$16 + 30 = 36$

$36 - 34 = 2$ m

3. The diagram shows four 45-45-90 triangles.

a) if OA is 3, find EO.

b) if EO is 8 find OA.



$EO = 12$

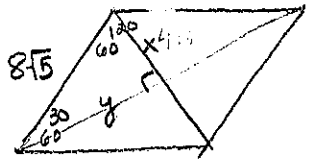
$OA = 2$

~~4~~ A right triangle has the side lengths of $(4n-4)$, $2n$, and $\sqrt{13}n$. Find the length of each side.

$\approx 3.6n$ (biggest)

SKIP

5. A rhombus has a perimeter of $32\sqrt{5}$, and one of its angles is 120°. Find the lengths of both diagonals.



$8\sqrt{5} = 2x$

$4\sqrt{5} = x$

Short diag $= 2 \cdot 4\sqrt{5} = \boxed{8\sqrt{5}}$

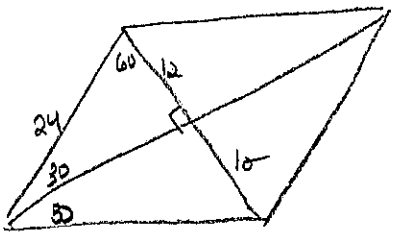
$4\sqrt{5} \cdot \sqrt{3} = y$

$4\sqrt{15} = y$

long diag. $= 2 \cdot 4\sqrt{15}$

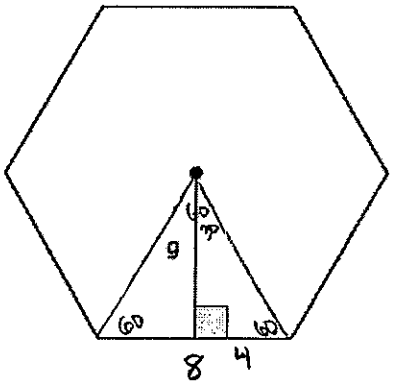
$= \boxed{8\sqrt{15}}$

6. The length of the shorter diagonal of a rhombus is 24. If one of its angles is 60°, find the length of its perimeter.



$24 \cdot 4 = \boxed{96}$

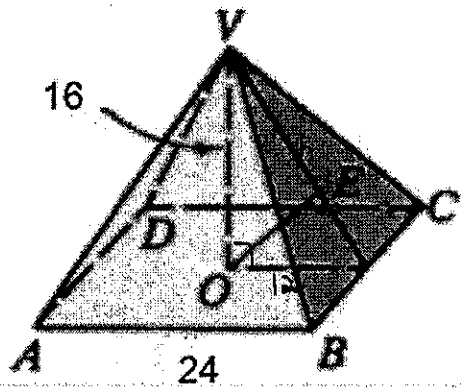
7. A regular hexagon has a side length of 8. Find the distance from the center of the hexagon to the side.



$4\sqrt{3}$

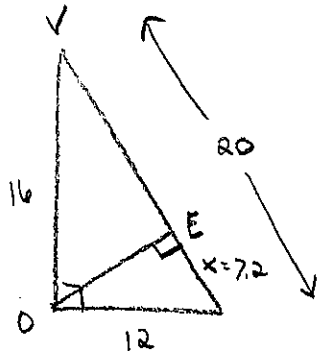
g=distance from the center to the side.

8. O is the center of square ABCD, and VO is perpendicular to the plane of the square. Find OE, the distance from O to the plane of triangle VBC.



$12^2 + 16^2 = h^2$

$20 = h$



$\frac{x}{12} = \frac{12}{20}$

$x = 7.2$

$7.2^2 + OE^2 = 12^2$

$OE^2 = 92.16$

$OE = 9.6$