Honors Geometry Name Key

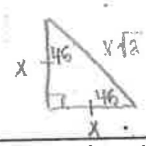
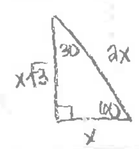
8.1-8.2 QUIZ REVIEW WORKSHEET

Simplify each of the following radical expressions. Fill in your final answers to the right:

$(2\sqrt{32})(-6\sqrt{150})$ $\sqrt{16}\sqrt{2}$ $\sqrt{25}\sqrt{6}$ $=(2\cdot4\sqrt{2})(-6\cdot5\sqrt{6})$ $=(8\sqrt{2})(-30\sqrt{6})$ $=-240\sqrt{12}$ $\sqrt{4}\sqrt{3}$ $=-240\cdot2\sqrt{3}$ $=-480\sqrt{3}$	2. $7\sqrt{40}+2\sqrt{20}-4\sqrt{360}$ $\sqrt{4}\sqrt{10}$ $\sqrt{4}\sqrt{5}$ $\sqrt{36}\sqrt{10}$ $=7\cdot2\sqrt{10}+2\cdot2\sqrt{5}-4\cdot6\sqrt{10}$ $=14\sqrt{10}+4\sqrt{5}-24\sqrt{10}$ $=-10\sqrt{10}+4\sqrt{5}$	1. $-480\sqrt{3}$ 2. $-10\sqrt{10}+4\sqrt{5}$

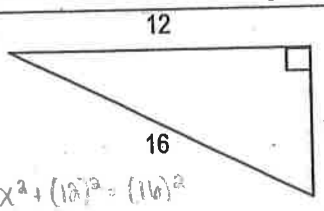
Determine if the given side measures can form a triangle. If so, determine if the triangle is right, obtuse, or acute.

3. 82, 80, 18 $(18)^2+(80)^2=(82)^2$ $324+6400=6724$ $6724=6724$ RIGHT	4. 4, 2, 10 not a triangle	5. 20, $10\sqrt{6}$, 31 $(20)^2+(10\sqrt{6})^2=(31)^2$ $400+(100\cdot6)=961$ ACUTE $400+600=961$ $1000>961$

6. In an isosceles right triangle, if you know the length of the hypotenuse, how do you find the length of each leg?  Divide the hypotenuse by $\sqrt{2}$.	7. In a 30-60 right triangle, if you know the length of the hypotenuse, how do you find the length of the longer leg?  Divide by 2, then multiply by $\sqrt{3}$.

Determine the missing variable(s) as a simplified radical:

8.



$x^2+(12)^2=(16)^2$

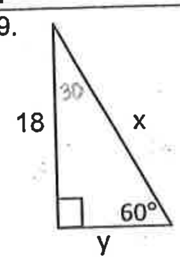
$x^2+144=256$

$x^2=112$

$x=\sqrt{112}$ $\sqrt{16}\sqrt{7}$

$x=4\sqrt{7}$

9.



$y=\frac{18}{\sqrt{3}}\cdot\frac{\sqrt{3}}{\sqrt{3}}=\frac{18\sqrt{3}}{3}$

$y=6\sqrt{3}$

$x=6\sqrt{3}\cdot2$

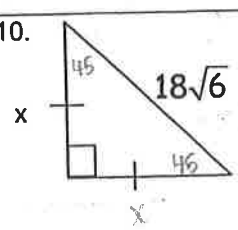
$x=12\sqrt{3}$

8. $4\sqrt{7}$

9. x = $12\sqrt{3}$

y = $6\sqrt{3}$

10.



$x=\frac{18\sqrt{6}}{\sqrt{2}}\cdot\frac{\sqrt{2}}{\sqrt{2}}$

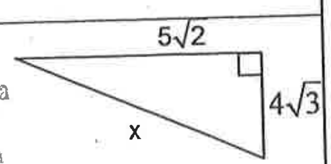
$=\frac{18\sqrt{12}}{2}$ $\sqrt{4}\sqrt{3}$

$=\frac{18\cdot2\sqrt{3}}{2}$

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

$x=18\sqrt{3}$

11.



$(5\sqrt{2})^2+(4\sqrt{3})^2=x^2$

$(25\cdot2)+(16\cdot3)=x^2$

$50+48=x^2$

$98=x^2$

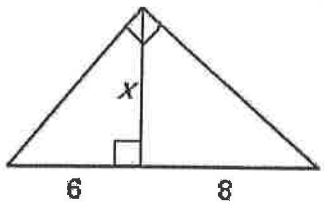
$x=\sqrt{98}$ $\sqrt{49}\sqrt{2}$

$x=7\sqrt{2}$

10. x= $36\sqrt{3}$

11. x= $7\sqrt{2}$

12.



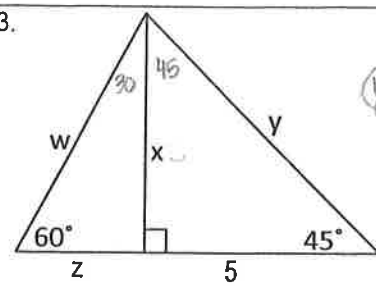
$\frac{6}{x} = \frac{x}{8}$

$x^2 = 48$

$x = \sqrt{48}$ $\quad \sqrt{16}\sqrt{3}$

$x = 4\sqrt{3}$

13.



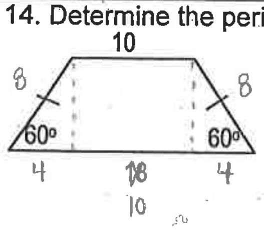
$y = 5\sqrt{2}$

$x = 5$

$z = \frac{5}{\sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}}$ $\quad w = \frac{5\sqrt{3}}{3} \cdot 2$

$z = \frac{5\sqrt{3}}{3}$ $\quad w = \frac{10\sqrt{3}}{3}$

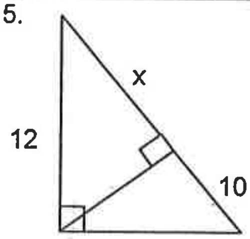
14. Determine the perimeter of the trapezoid:



Perimeter = $10 + 8 + 8 + 18$

$= 44$

15.



$\frac{10 + x}{12} = \frac{12}{x}$

$x(10 + x) = 144$

$10x + x^2 = 144$

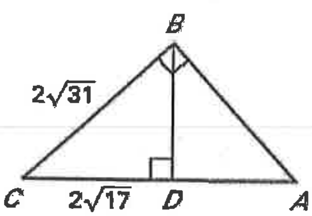
$x^2 + 10x - 144 = 0$

$(x - 8)(x + 18) = 0$

$x - 8 = 0 \quad x + 18 = 0$

$x = 8 \quad \cancel{x = -18}$

16. Find AC:



$\frac{AC}{2\sqrt{31}} = \frac{2\sqrt{31}}{2\sqrt{17}}$

$2\sqrt{17}\,AC = (2\sqrt{31})(2\sqrt{31})$

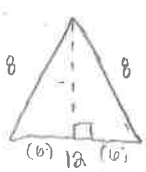
$2\sqrt{17}\,AC = 4 \cdot 31$

$2\sqrt{17}\,AC = 124$

$AC = \frac{124}{2\sqrt{17}} = \frac{62}{\sqrt{17}} \cdot \frac{\sqrt{17}}{\sqrt{17}}$

$AC = \frac{62\sqrt{17}}{17}$

17. The legs of an isosceles triangle are each 8. The base has a length of 12. Find the length of the altitude from the vertex angle.



$a^2 + (6)^2 = (8)^2$

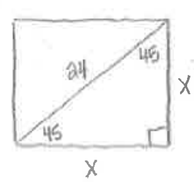
$a^2 + 36 = 64$

$a^2 = 28$

$a = \sqrt{28}$ $\quad \sqrt{4}\sqrt{7}$

$a = 2\sqrt{7}$

18. Find the area of a square with a diagonal of 24 inches.



$x = \frac{24}{\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}}$

$x = \frac{24\sqrt{2}}{2} = 12\sqrt{2}$

Area $= (12\sqrt{2})^2 = 144 \cdot 2$

Area $= 288$ in^2

12. $4\sqrt{3}$

13. w= $\frac{10\sqrt{3}}{3}$

x= 5

y= $5\sqrt{2}$

z= $\frac{5\sqrt{3}}{3}$

14. 44

15. 8

16. AC= $\frac{62\sqrt{17}}{17}$

17. $2\sqrt{7}$

18. 288 in^2