Name Key Hour _____

Acc Geometric Mean Homework #1

1. Find the geometric mean between the two numbers. Show all work and simplify radicals!

4 and 4 $\frac{x}{4} = \frac{4}{x}$ $x = 4$

6 and 9 $x^2 = 54$ $x = \sqrt{54}$

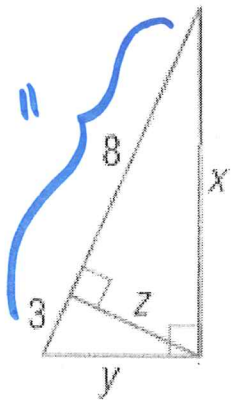
$2\sqrt{3}$ and $3\sqrt{3}$ $\frac{x}{2\sqrt{3}} = \frac{3\sqrt{3}}{x}$ $x^2 = 6 \cdot 3$ $x^2 = 18$ $x = 3\sqrt{2}$

Find the Geometric Mean between a and b where $a = 4\sqrt{5}$ *and* $b = 7\sqrt{10}$.

$\frac{x}{4\sqrt{5}} = \frac{7\sqrt{10}}{x}$ $28 \cdot \sqrt{50}$ $140\sqrt{2} = x^2$ $(140\sqrt{2})^{1/2} = x$

Find the value of each variable.

2.

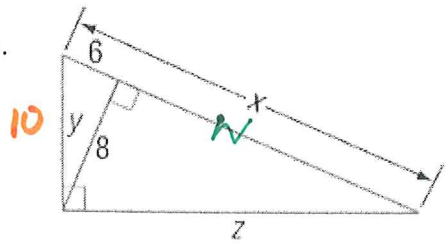


$\frac{x}{8} = \frac{11}{x}$ $x^2 = 88$ $x = 2\sqrt{22}$

$\frac{y}{3} = \frac{11}{y}$ $y = \sqrt{33}$

$\frac{z}{3} = \frac{8}{z}$ $z = \sqrt{24}$ $z = 2\sqrt{6}$

3.



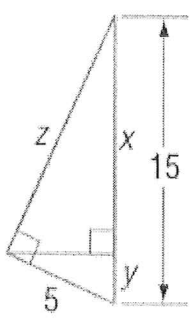
$6^2 + 8^2 = y^2$ $10 = y$

$\frac{10}{6} = \frac{x}{10}$ $100 = 6x$ $16.\overline{6} = x$ $x = \frac{50}{3}$ ✓

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

$\frac{z}{(\frac{50}{3})} = \frac{(32/3)}{z}$ $z^2 = \frac{1600}{9}$ $z = \frac{40}{3}$

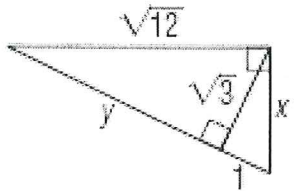
4.



$\frac{5}{15} = \frac{y}{5}$ $y = 1.\overline{6}$ $y = 5/3$

$z^2 + 5^2 = 15^2$ $z = 10\sqrt{2}$

$\frac{10\sqrt{2}}{15} = \frac{x}{10\sqrt{2}}$ $200 = 15x$ $13.\overline{3} = x$ $x = 40/3$

5. 

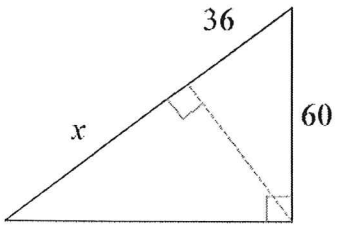
$\frac{\sqrt{3}}{y} = \frac{1}{\sqrt{3}}$

$y = 3$

$(\sqrt{3})^2 + 1^2 = x^2$

$4 = x^2$

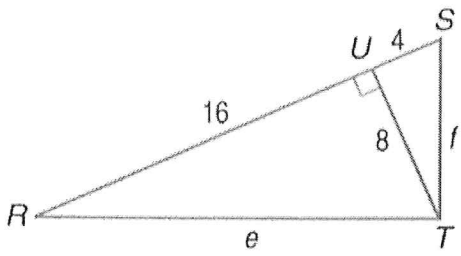
$2 = x$

6. 

$\frac{60}{36} = \frac{x+36}{60}$

$3600 = 36x + 1296$

$x = 64$

7. 

$\frac{f}{4} = \frac{20}{f}$

$f = \sqrt{80}$

$f = 4\sqrt{5}$

$\frac{e}{16} = \frac{20}{e}$

$e^2 = 320$

$e = 8\sqrt{5}$

8. $\sqrt{17}$ is the geometric mean of a and b. Find a if $b = \sqrt{3}$.

$\frac{\sqrt{17}}{\sqrt{3}} = \frac{a}{\sqrt{17}}$ $\quad \frac{17}{\sqrt{3}} = \frac{\sqrt{3}a}{\sqrt{3}}$

Never have radical in denom.

$\frac{17}{\sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}} = \frac{17\sqrt{3}}{\sqrt{9}} = \frac{17\sqrt{3}}{3}$

9. 10 is the geometric mean between 2 and another number. Find the other number.

$\frac{10}{2} = \frac{x}{10}$ $\quad 100 = 2x$

$50 = x$