Personal Math Trainer

17.4 Similarity in Right Triangles - Class & Homework

HMH

1. Find the geometric mean of the numbers. If necessary, give the answer in simplest radical form.

3 and 75

*Multiply the numbers together and then take a square root

The geometric mean is ____.

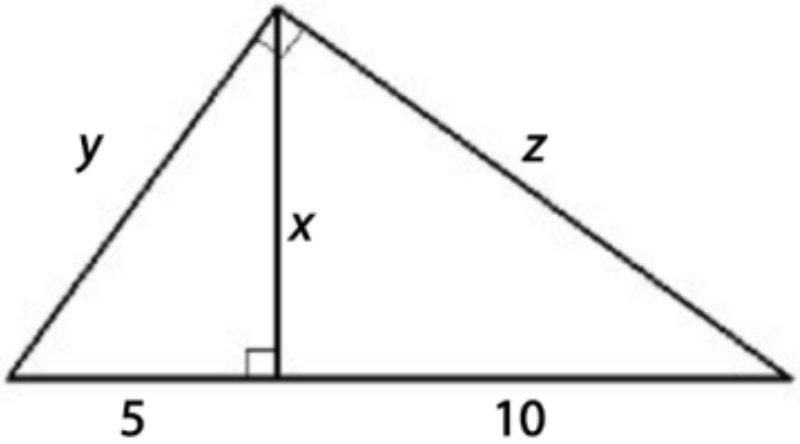
$\sqrt{3 \cdot 75}$

$\sqrt{3 \cdot 3 \cdot 25}$

$\sqrt{9} \cdot \sqrt{25}$

$= 3 \cdot 5 = 15$

2. Find x.



The value of x is $\sqrt{50}$.

You can use the Geometric Means Theorems

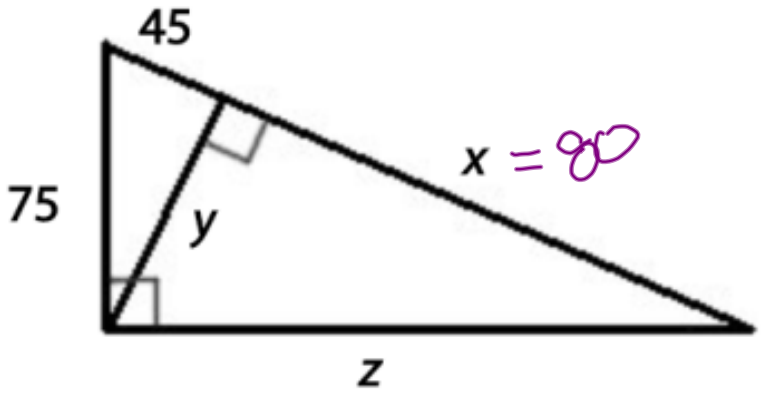
$$\frac{5}{x} = \frac{x}{10}$$

$$50 = x^2$$

$$\sqrt{50} = \sqrt{x^2}$$

$$\sqrt{50} = x$$

3. Find x, y, and z. Drag and drop the numbers into the boxes to show the value of each variable.



$x =$ 80

$y =$ 60

$z =$ 100

take guess

$\frac{45}{75} = \frac{75}{45+x}$

$45(45+x) = 75^2$

$2020 + 45x = 5625$

$-2020 \quad -2020$

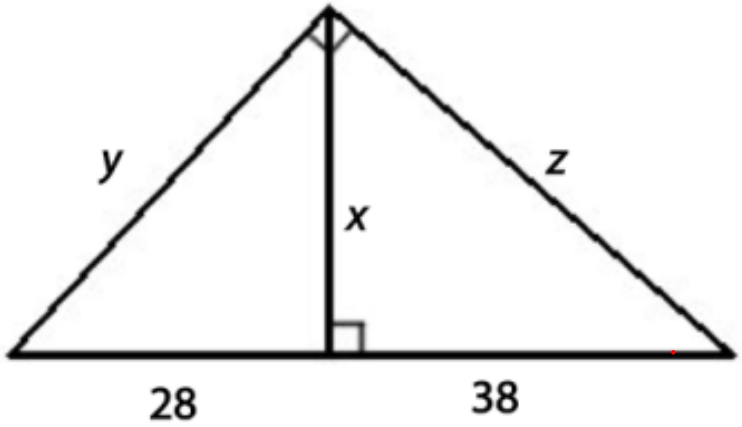
$\frac{45x}{45} = \frac{3605}{45}$

$x = 80$

$\frac{45}{y} = \frac{y}{80}$

$y = \sqrt{45(80)} = 60$

4. Find x, y, and z. Drag and drop the numbers into the boxes to show the value of each variable.



$$\frac{28}{x} = \frac{x}{38}$$

$$x^2 = 1{,}064$$

$$x = \sqrt{1{,}064}$$

$$x = 2\sqrt{266}$$

$$\frac{28}{y} = \frac{y}{66} \quad 28+38$$

$$y^2 = 1{,}848$$

$$y = \sqrt{1{,}848}$$

$$y = 2\sqrt{462}$$

$$\frac{38}{z} = \frac{z}{66} \quad 28+38$$

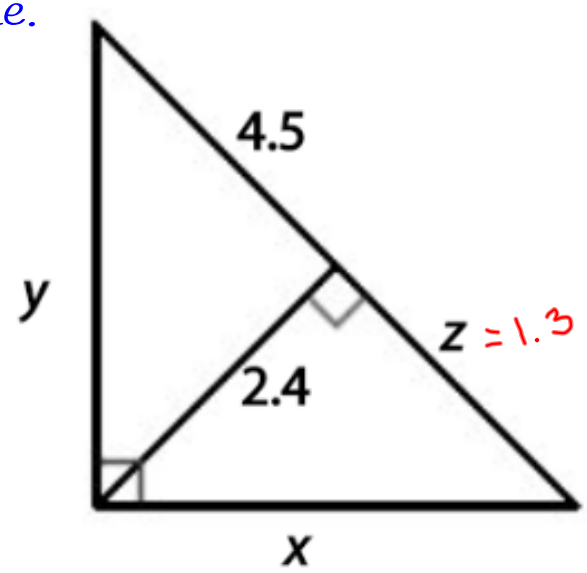
$$z^2 = 2{,}508$$

$$z = \sqrt{2{,}508}$$

$$z = 2\sqrt{627}$$

http://www.mathwarehouse.com/arithmetic/square-root-calculator.php

5. Find x, y, and z. Drag and drop the numbers into the boxes to show the value of each variable.



$$\frac{4.5}{2.4} = \frac{2.4}{z}$$

$$4.5z = 5.76$$

$$\frac{4.5z}{4.5} = \frac{5.76}{4.5}$$

$$z = 1.3$$

$$\frac{4.5}{y} = \frac{y}{4.5+1.3=5.8}$$

$$y^2 = 4.5(5.8)$$

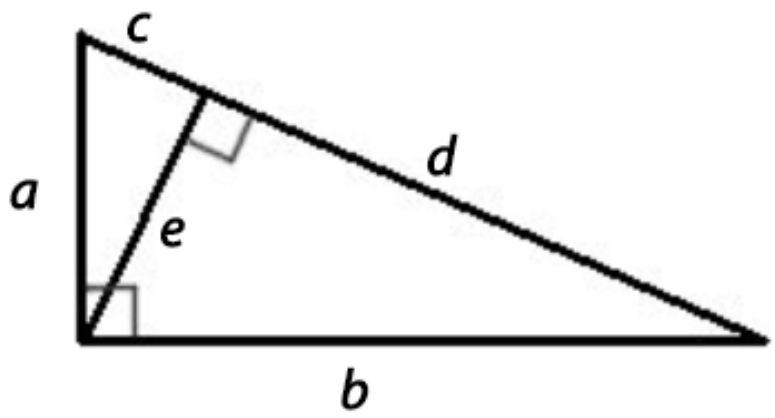
$$\sqrt{y^2} = \sqrt{26.1} = 5.1$$

$$\frac{1.3}{x} = \frac{x}{4.5+1.3=5.8}$$

$$x^2 = 1.3(5.8)$$

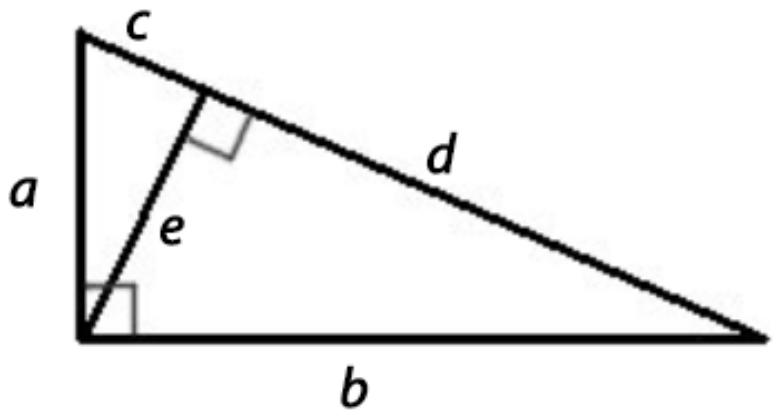
$$\sqrt{x^2} = \sqrt{7.54} = 2.7$$

6. Use the diagram to complete the equation.



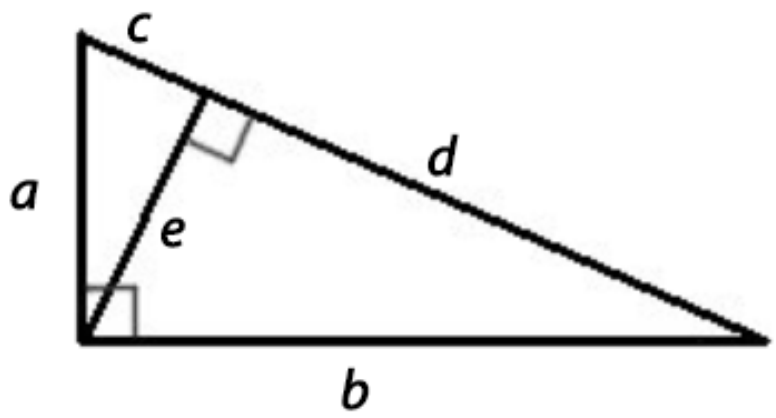
$$\frac{c}{e} = \frac{\square\ e}{d}$$

7. Use the diagram to complete the equation.



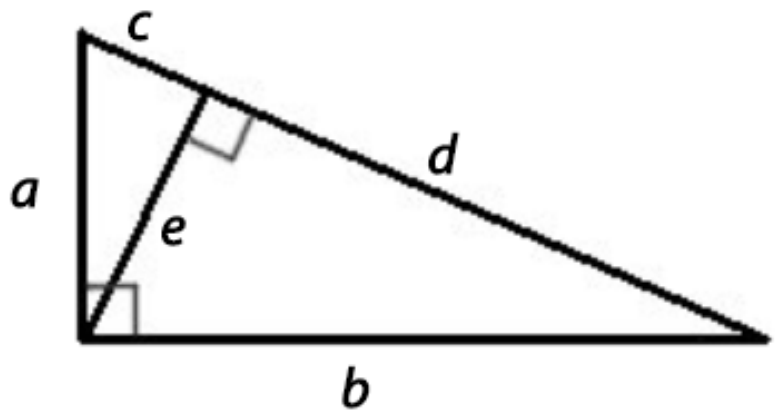
$$\frac{c}{a} = \frac{a}{c+d}$$

8. Use the diagram to complete the equation.



$$\frac{c+d}{b} = \frac{b}{\square\, d}$$

9. Use the diagram to complete the equation.



$$\frac{d}{\square} = \frac{e}{c}$$

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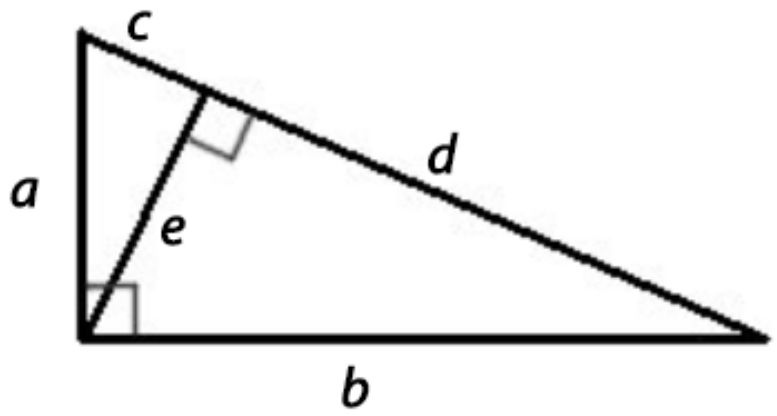
10. Use the diagram to complete the equation.



$$\frac{c}{a} = \frac{a}{c+d}$$

$c(c+d) =$ a^2