

7.4

Monday, October 19, 2020 6:17 PM

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Math 9 HW Section 7.4 Similar Triangles:

1. Given that each pair of similar triangles, indicate which side in the second triangle corresponds with side "x"?

<p>a) $\triangle ABC \sim \triangle FDE$</p> <p>$x = AB$</p>	<p>b) $\triangle FOG \sim \triangle NEW$</p> <p>$x = EN$</p>	<p>c) $\triangle MON \sim \triangle POQ$</p> <p>$x = MO$</p>
<p>d) $\triangle FIJ \sim \triangle HGF$</p> <p>$x = FG$</p>	<p>e) $\triangle TYW \sim \triangle TVU$</p> <p>$x = TV$</p>	<p>f) Challenge: $\triangle TAC \sim \triangle DOG$</p> <p>$x = CT$</p>

2. Given that following pairs of similar triangles, find the length of the missing side "x".

<p>a)</p> <p>$\frac{8}{12} = \frac{6}{x}$</p> <p>$x = 9$</p>	<p>b)</p> <p>$\frac{8}{12} = \frac{x}{20}$</p> <p>$96 = 20x$</p> <p>$x = \frac{24}{5}$</p>
<p>d)</p> <p>$\frac{9}{x} = \frac{8}{15}$</p> <p>$135 = 8x$</p> <p>$x = \frac{135}{8}$</p>	<p>d)</p> <p>$\frac{8}{20} = \frac{6}{6+x}$</p> <p>$48 + 8x = 120$</p> <p>$9 = x$</p>
<p>e)</p> <p>$\frac{9}{21} = \frac{x}{14}$</p> <p>$x = 6$</p>	<p>f)</p> <p>$\frac{5}{5+x} = \frac{12}{36}$</p> <p>$180 = 60 + 12x$</p> <p>$120 = 12x$</p> <p>$x = 10$</p>

3. Indicate whether if the following statements are true OR false: Explain why.

i) If two triangles are similar they have the same shape

TRUE FALSE

ii) If two triangles are similar, they have the same size

TRUE FALSE

iii) All equilateral triangles are similar

TRUE FALSE

iv) All isosceles triangles are similar

TRUE FALSE

v) All isosceles right triangles are similar

TRUE FALSE

vi) All right triangles are similar

TRUE FALSE

vii) All squares are similar

TRUE FALSE

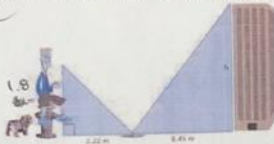
4. Naomi wants to calculate the height of a tree. She is 1.2 m tall and casts a shadow of 2.75 m. At the same time, the shadow of the tree is 10.5 m long. How tall is the tree?

$$\frac{1.2}{x} = \frac{2.75}{10.5}$$

$$2.75x = 12.6$$

$$x = 4.581$$

5. Given the following diagram with the two similar triangles, what is the height of the building?

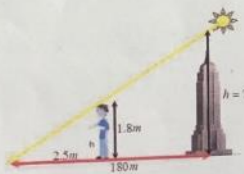


$$\frac{1.8}{h} = \frac{2.22}{8.45}$$

$$15.21 = 2.22h$$

$$h = 6.8513$$

6. Jason is 1.8m tall and the sun casts a shadow of 2.5m. A building nearby has a shadow 180meters long. Using similar triangles, how high is the building?



$$\frac{1.8}{2.5} = \frac{h}{180}$$

$$324 = 2.5h$$

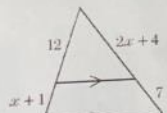
$$h = 129.6$$

$$\frac{1.8}{x+2} = \frac{3x-3}{10}$$

$$120 = 3x^2 + 3x - 6$$

$$x = 6$$

7. Solve for the value of "x"



$$\frac{12}{x+1} = \frac{2x+4}{7}$$

$$84 = 2x^2 + 6x + 4$$

$$x = 5$$

