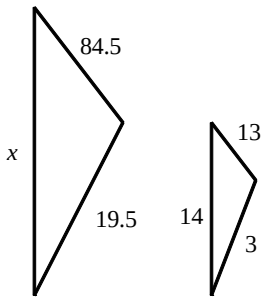
NAME:_____

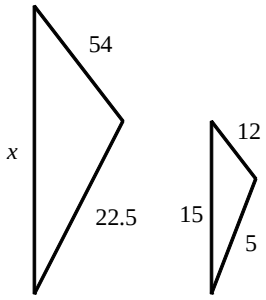
P.I. G.G.45: Investigate, justify, and apply theorems about similar triangles

1. The triangles below are similar. Find the length of *x*.



[A] 97.5 [B] 91 [C] 2.2 [D] 97

2. The triangles below are similar. Find the length of *x*.



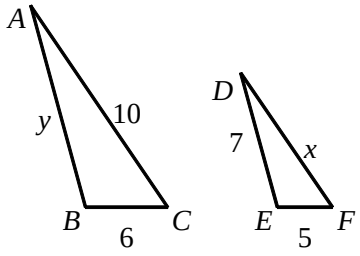
[A] 3.3 [B] 28.1 [C] 72 [D] 67.5

3. Triangles *ABC* and *XYZ* are similar with $\angle A \cong \angle X$, and $\angle B \cong \angle Y$. If *AB*, *BC*, and *AC* are 7 inches, 13 inches, and 15 inches long, respectively, and *XY* is 12 inches long, find *XZ*. (Answer to the nearest tenth.)

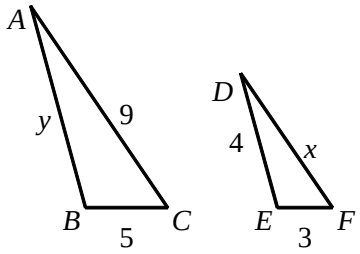
[A] 8.8 in. [B] 25.7 in.

[C] 22.3 in. [D] 7.6 in.

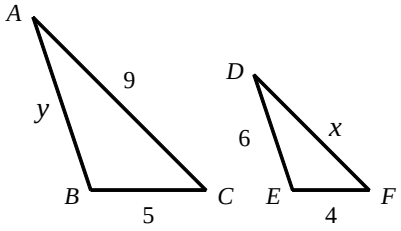
4. Given: $\Delta ABC \sim \Delta DEF$, solve for *x* and *y*.



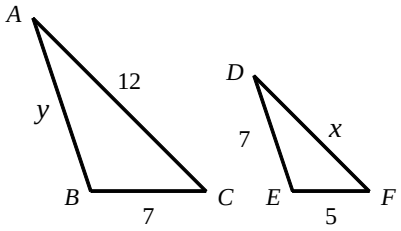
5. Given: $\Delta ABC \sim \Delta DEF$, solve for *x* and *y*.



6. Given that triangle *ABC* and triangle *DEF* are similar, solve for *x* and *y*.



7. Given that triangle *ABC* and triangle *DEF* are similar, solve for *x* and *y*.



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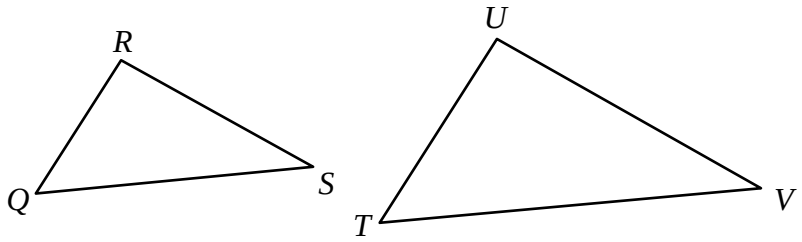
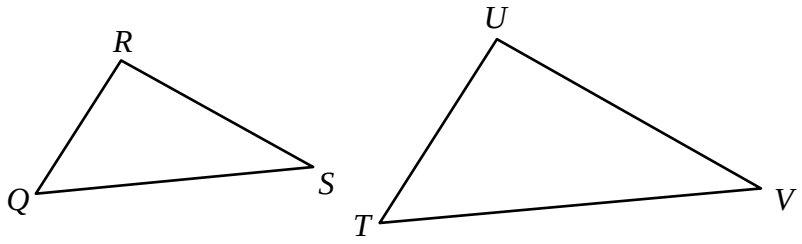
8. In the figure (not drawn to scale), ΔQRS is similar to ΔTUV. Find length UV to the nearest hundredth if $QR = 5$, $TU = 17$, and $RS = 7$.



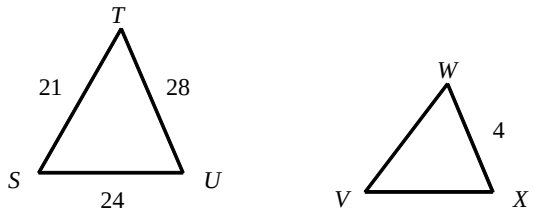
[A] 23.80 [B] 60.71 [C] 12.14 [D] 2.06

9. In the figure (not drawn to scale), ΔQRS is similar to ΔTUV. Find length UV to the nearest hundredth if $QR = 6$, $TU = 13$, and $RS = 7$.

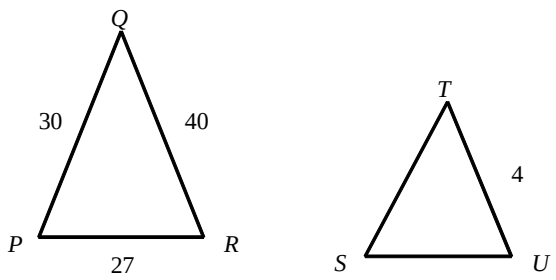


[A] 15.17 [B] 3.23 [C] 55.71 [D] 11.14

10. ΔSTU is similar to ΔVWX. Find VW.



11. ΔPQR is similar to ΔSTU. Find ST.



[1] B

[2] D

[3] B

[4] $x = 8\frac{1}{3},\ y = 8\frac{2}{5}$

[5] $x = 5\frac{2}{5},\ y = 6\frac{2}{3}$

[6] $x = 7.2, y = 7.5$

[7] $x = 8.57, y = 9.8$

[8] A

[9] A

[10] $VW = 3$

[11] $ST = 3$