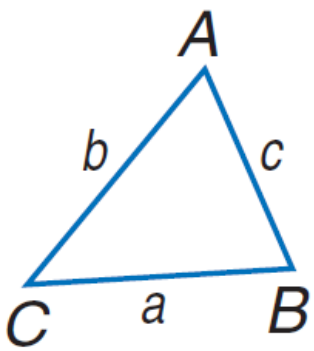
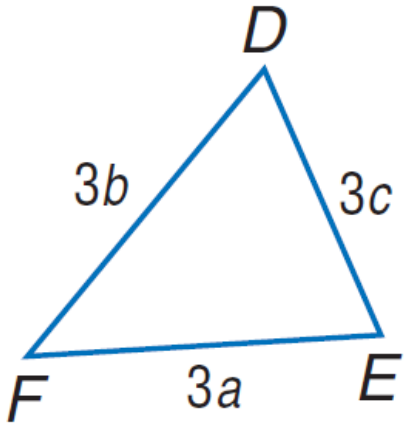
Proportional Perimeters Theorem

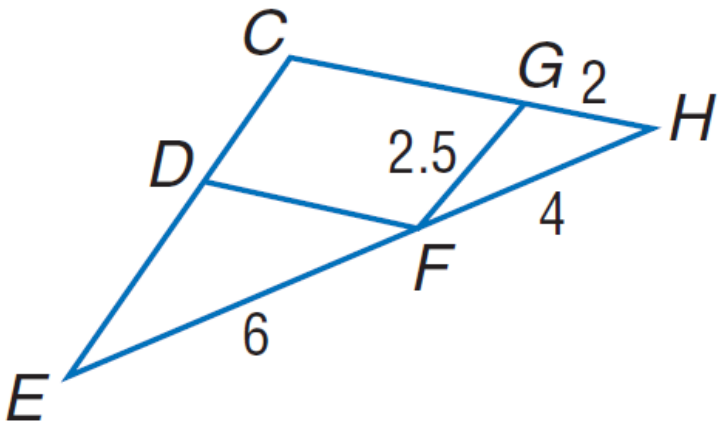
If 2 Δ's are ~, then the perimeters are proportional to the measures of the corresponding sides.

In other words, the perimeters of ~ triangles reduces to the same scale factor as the corresponding sides.

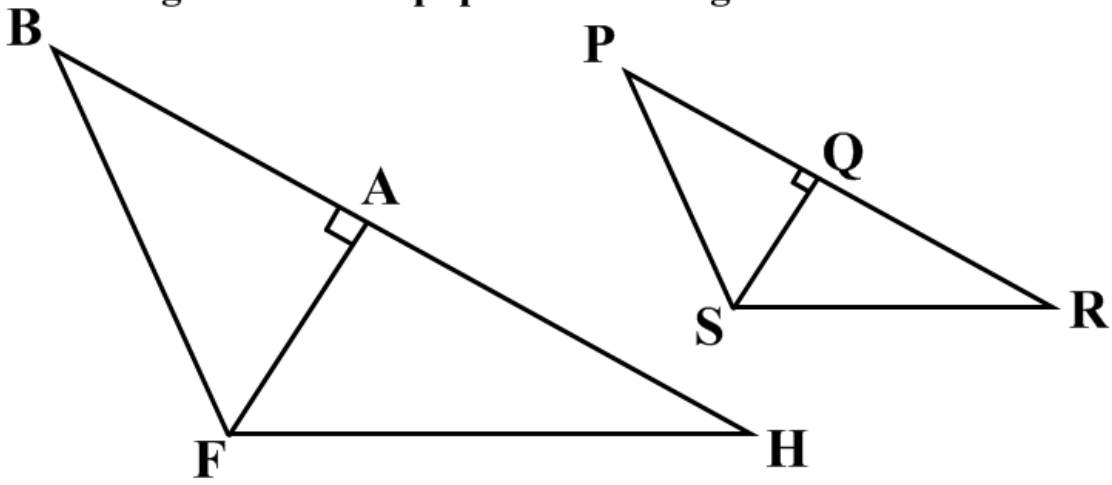




1. If $\triangle DEF \sim \triangle GFH$, find the perimeter of $\triangle DEF$.



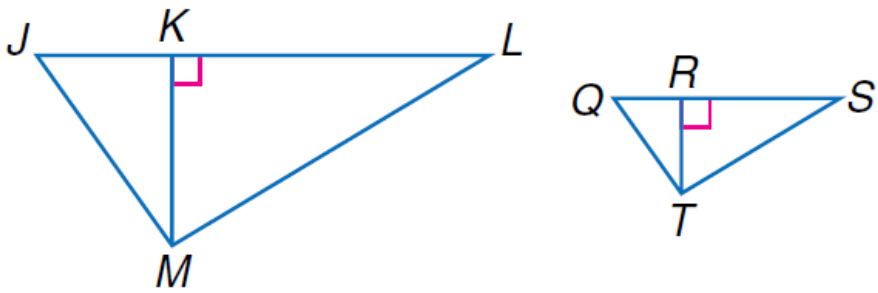
Triangle drawn on paper and enlarged or reduced....



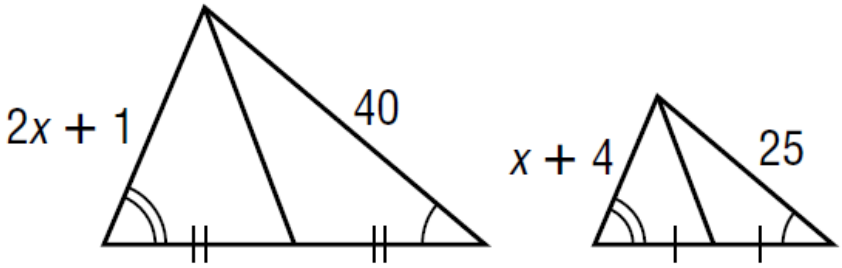
Special Segments of Similar Triangles

If 2 Δ's are ~, then the corresponding altitudes, angle bisectors, and medians reduce to the scale factor of the corresponding sides.

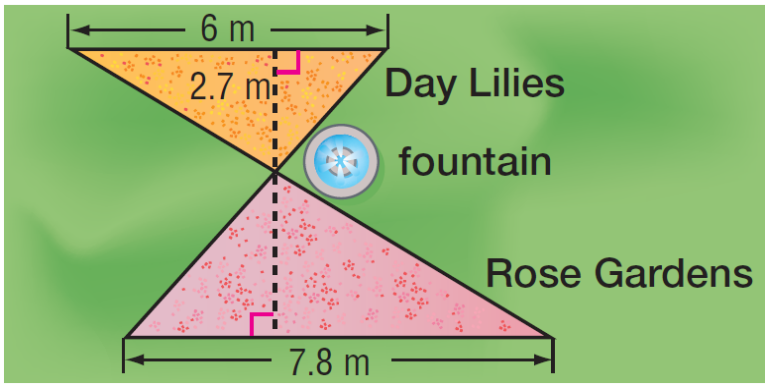
In the figure, $\triangle JLM \sim \triangle QST$. $\overline{KM}$ is an altitude of $\triangle JLM$, and $\overline{RT}$ is an altitude of $\triangle QST$. Find RT if $JL = 12$, $QS = 8$, and $KM = 5$.



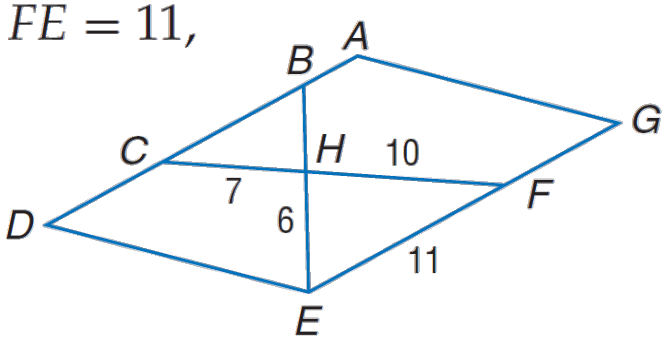
Find x.



LANDSCAPING The landscaping team at a botanical garden is planning to add sidewalks around the fountain. The gardens form two similar triangles. Find the distance from the fountain to the rose gardens.



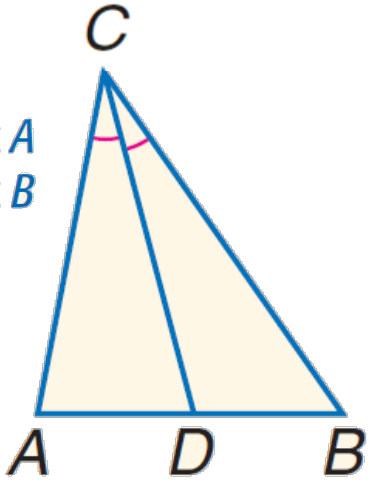
10. $\triangle CBH$, if $\triangle CBH \sim \triangle FEH$, $ADEG$ is a parallelogram, $CH = 7$, $FH = 10$, $FE = 11$, and $EH = 6$

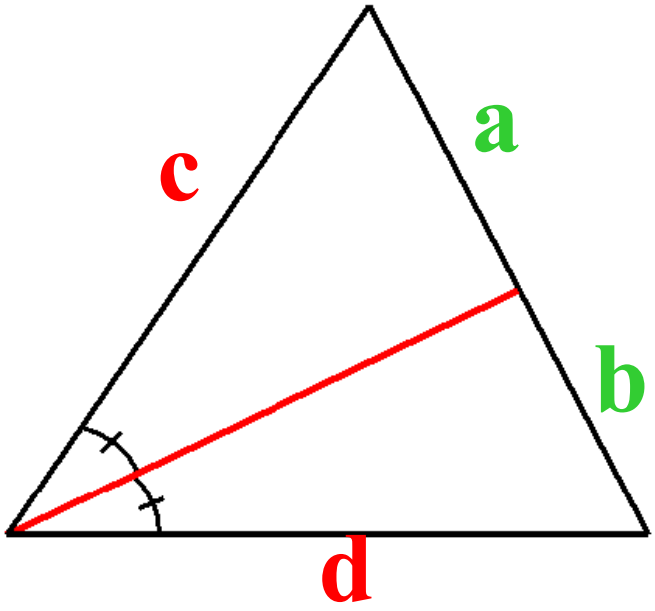


Angle Bisector Theorem

An ∠ bisector in a Δ separates the opposite side into segments that have the same ratio as the other 2 sides.

$$\frac{AD}{DB} = \frac{AC}{BC}$$ ← segments with vertex A ← segments with vertex B





Find x.