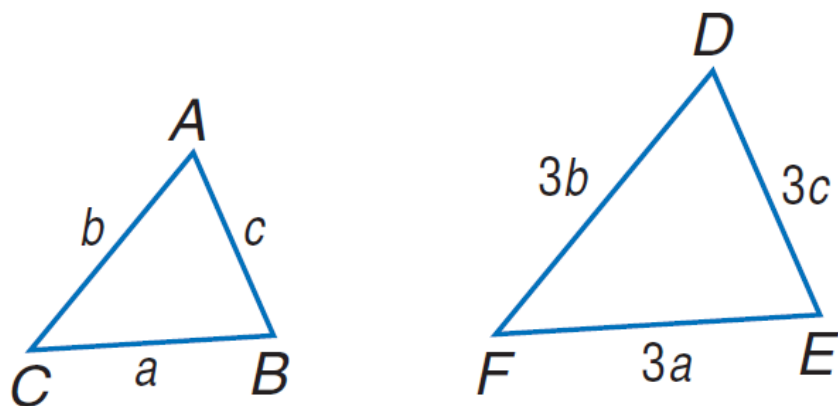# Proportional Perimeters Theorem
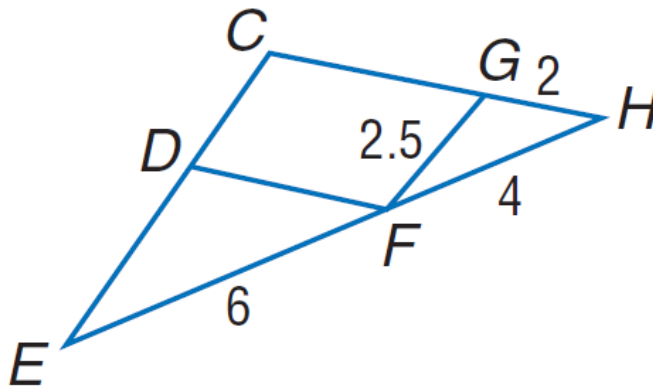
If 2 Δ's are ~, then the perimeters are proportional to the measures of the corresponding sides.

In other words, the perimeters of ~ triangles reduces to the same scale factor as the corresponding sides.
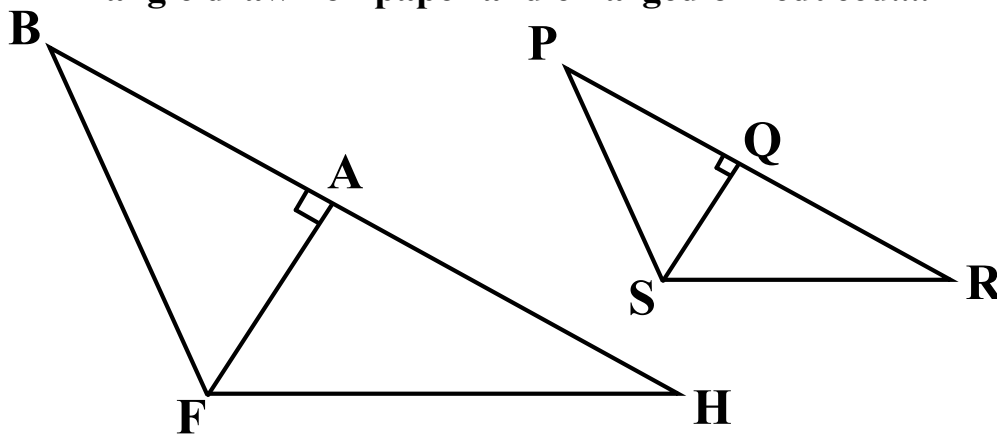
1. If $\triangle DEF \sim \triangle GFH$, find the perimeter of $\triangle DEF$.

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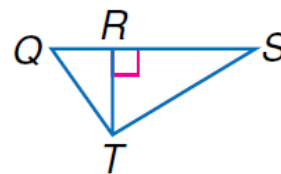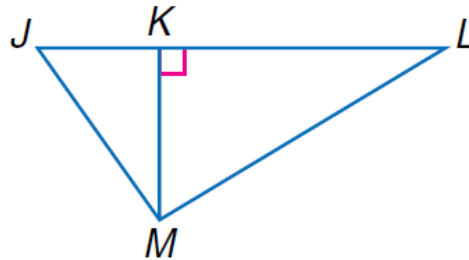
In the figure, $\triangle JLM \sim \triangle QST$.
$\overline{KM}$ is an altitude of $\triangle JLM$, and
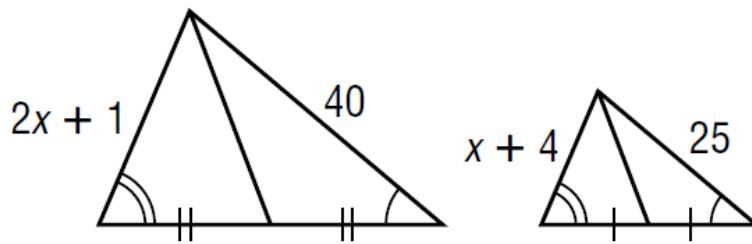$\overline{RT}$ is an altitude of $\triangle QST$.
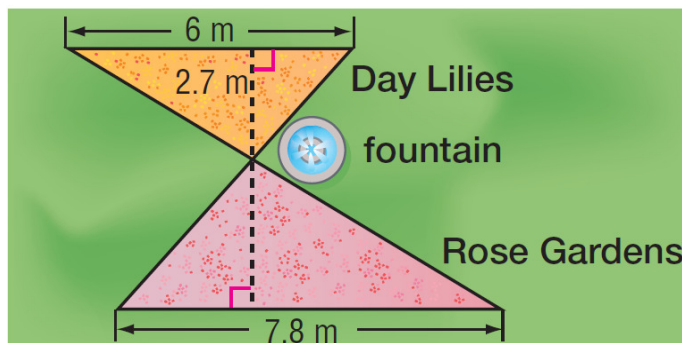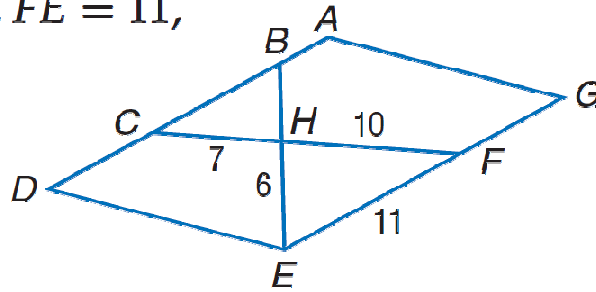Find RT if $JL = 12$, $QS = 8$, and
$KM = 5$.

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.
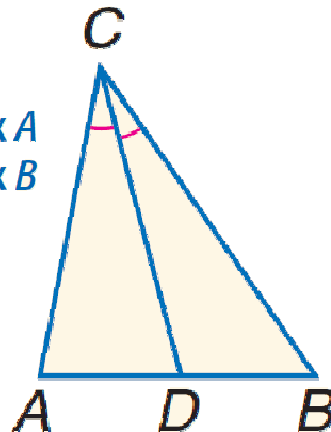
Find the perimeter of

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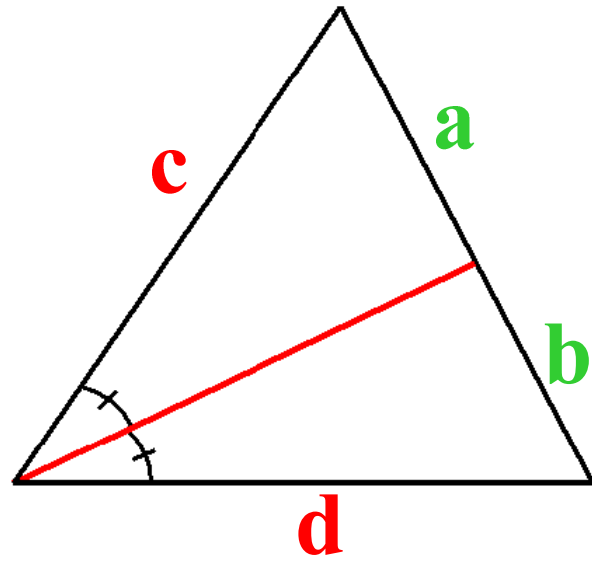
Angle Bisector Theorem

An $\angle$ bisector in a $\triangle$ 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.