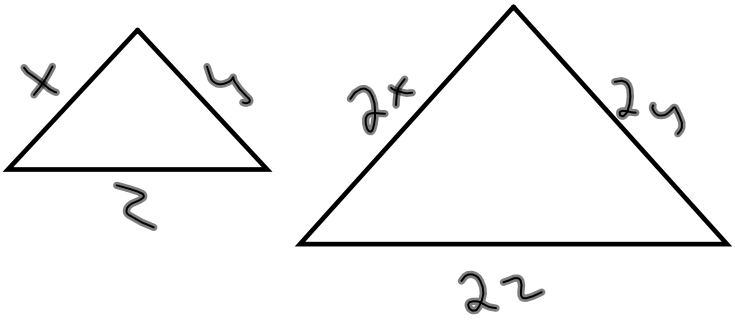
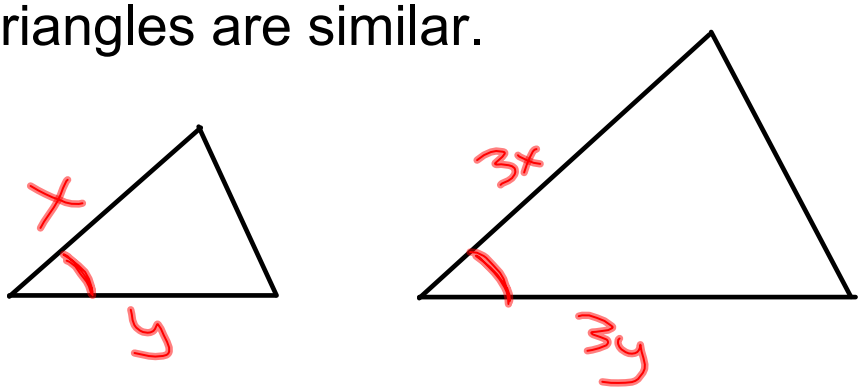
Chapter 6.5: Prove Triangles Similar by SSS and SAS

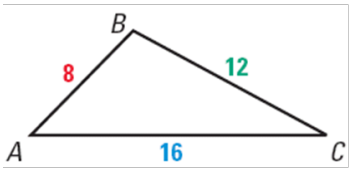
SSS Similarity: if the sides are proportional then the triangles are similar

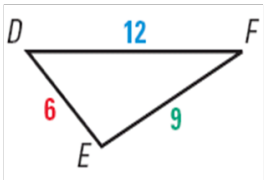


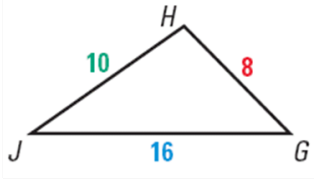
SAS Similarity: if the sides are proportinal and the included angle is congruent then the triangles are similar.



Which triangle is similar to ABC?



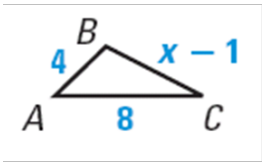


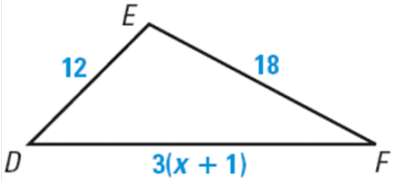


$\frac{8}{6} = \frac{12}{9} = \frac{16}{12}$ $\frac{8}{8} = \frac{12}{10}$

$\frac{4}{3} = \frac{4}{3} = \frac{4}{3}$

What value of x makes the triangles similar?





$\frac{8}{3(x+1)} = \frac{4}{12} = \frac{(x-1)}{18}$

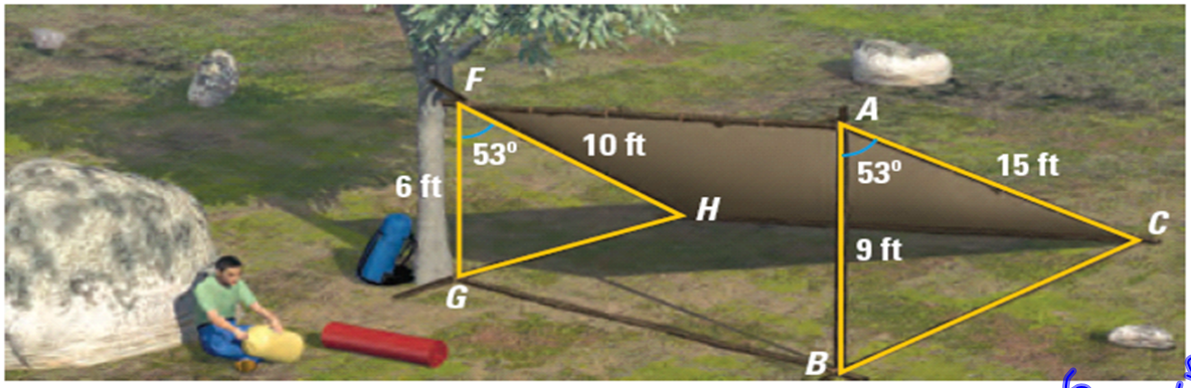
$12(x-1) = 72$

$96 = 12(x+1)$ $12x - 12 = 72$ $+12 \quad +12$

$\frac{96}{-12} = \frac{12x}{-12} + \frac{12}{-12}$ $\frac{12x}{12} = \frac{84}{12}$ $x = 7$

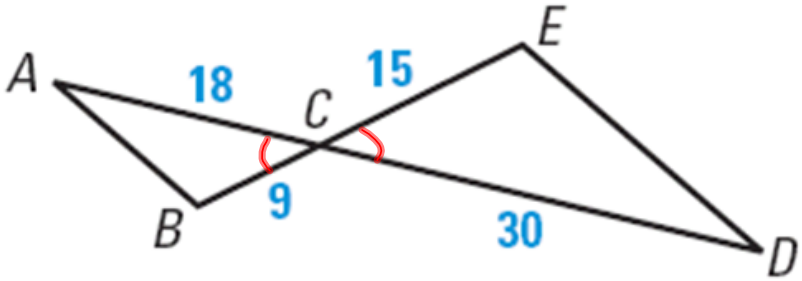
$\frac{84}{12} = \frac{12x}{12}$ $x = 7$

You are building a lean-to starting from a tree branch. Can you construct the right end so it is similar to the left end?



$\angle GFH \cong \angle BAC$ $\frac{6}{9} = \frac{10}{15}$ $\frac{2}{3} = \frac{2}{3}$ by SAS sim. $\triangle FHG \sim \triangle ACB$

Are the triangles similar? Why?



$\frac{18}{30} = \frac{9}{15}$ $\angle ACB \cong \angle DCE$ vert $\angle$'s

$\frac{9}{15} = \frac{9}{15}$ $\triangle ABC \sim \triangle DEC$

Homework: Chapter 6.5 Worksheet