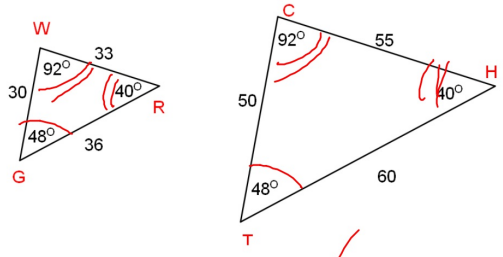
Are these triangles similar?



Are corresponding angles congruent? ✓

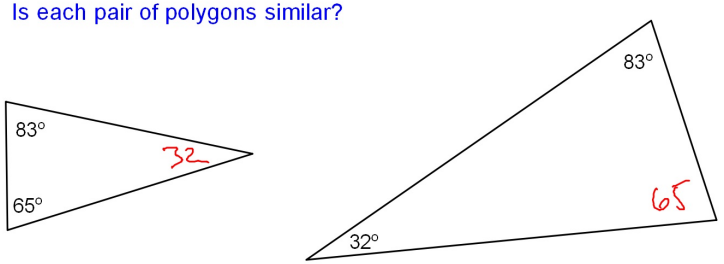
YES

Are corresponding sides proportional?

$\frac{30}{50} = \frac{36}{60} = \frac{33}{55}$ ✓

$\frac{3}{5}$ $\frac{3}{5}$ $\frac{3}{5}$

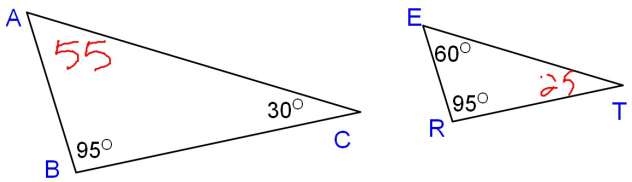
Is each pair of polygons similar?



For triangles, to show that they are similar it's good enough to show that two pairs of corresponding angles are congruent

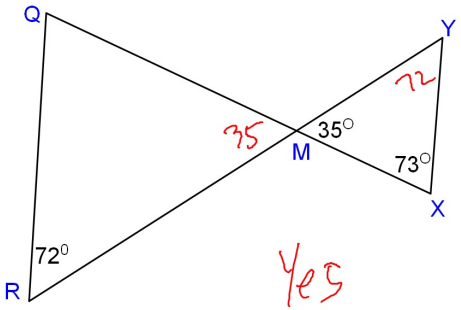
Angle-Angle Similarity Postulate.

Are the triangles similar?



NO

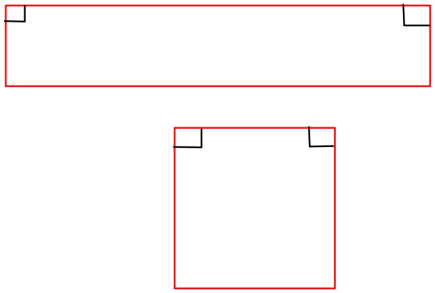
Are the triangles similar?



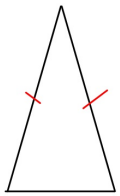
Yes

Do you think that showing two pairs of corresponding angles in Quadrilaterals is enough to prove that they are similar?

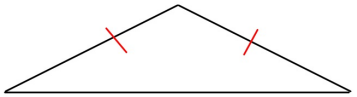
NO



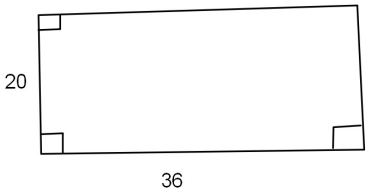
Do you think that there is a Side-Side Similarity Postulate for triangles?

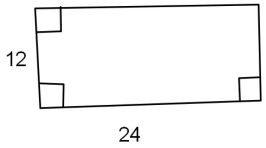


NO



Are each pair of polygons similar?





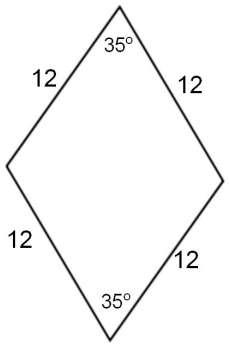
No, corresponding sides aren't proportional

Corr ∠s ≅ ✓

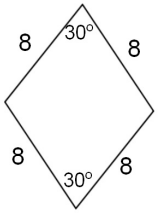
Corr sides proportional

$\frac{5}{3}$ $\frac{20}{12} \neq \frac{36}{24}$ $\frac{3}{2}$

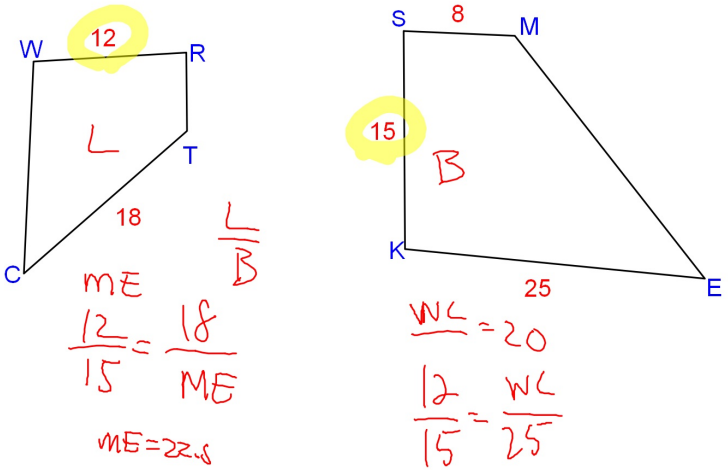
Are each pair of polygons similar?



No, corresponding angles aren't congruent



Given these figures as similar find the lengths of ME and WC.



$\frac{L}{B}$

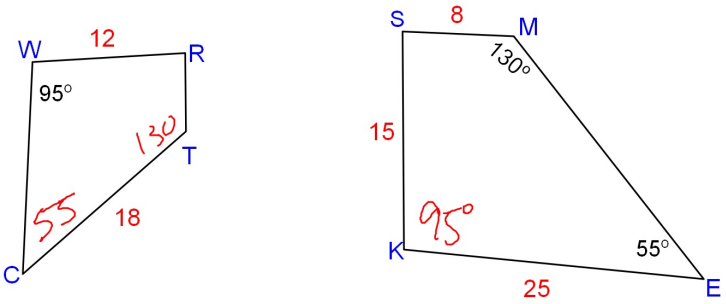
ME

$\frac{12}{15} = \frac{18}{ME}$

$ME = 22.5$

$WC = 20$

$\frac{12}{15} = \frac{WC}{25}$



Find the measure of the following angles:

angle C = 55° angle K = 95° angle R = 80

A logo is a rhombus with 4-cm sides and angles of 60° and 120°. Find the measures of the sides and angles is the logo is changed as follows:

1. Logo is increased in size by 50%

$\angle$'s are 60° & 120°

Sides = 6cm

2. Logo is reduced by 20%

$\angle$'s are 60° & 120°

Sides = 3.2

Normally to show that two figures are similar you must show:

1. All pairs of corresponding angles are congruent
2. All pairs of corresponding angles have the same ratio (proportional)

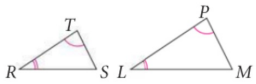
With triangles there are short-cuts

AA similarity Postulate

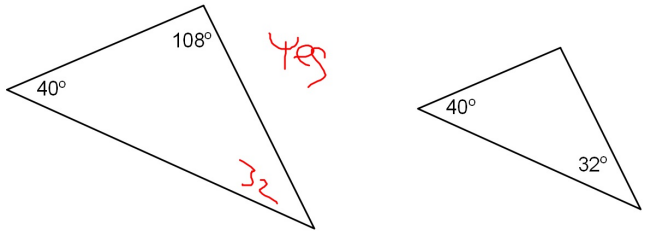
Postulate 7-1 **Angle-Angle Similarity (AA ~) Postulate**

If two angles of one triangle are congruent to two angles of another triangle, then the triangles are similar.

$\triangle TRS \sim \triangle PLM$



Are these triangles similar?



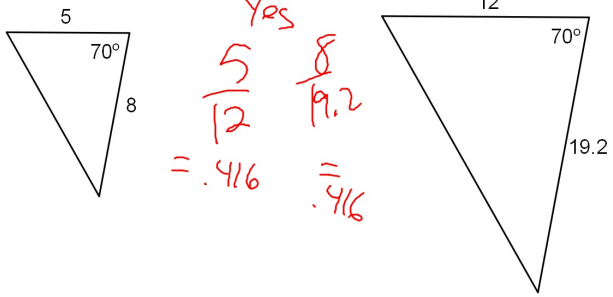
Yes

SAS similarity Theorem

Theorem 7-1 **Side-Angle-Side Similarity (SAS ~) Theorem**

If an angle of one triangle is congruent to an angle of a second triangle, and the sides including the two angles are proportional, then the triangles are similar.

Are these triangles similar?



Yes

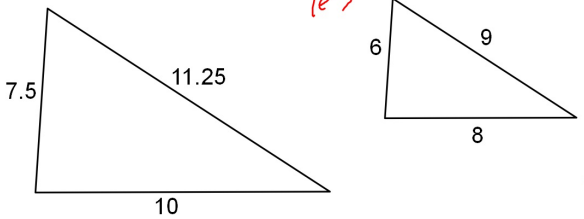
$\frac{5}{12} = .416$ $\frac{8}{19.2} = .416$

SSS similarity Theorem

Theorem 7-2 **Side-Side-Side Similarity (SSS ~) Theorem**

If the corresponding sides of two triangles are proportional, then the triangles are similar.

Are these triangles similar?



Yes

$\frac{7.5}{6} = 1.25$

$\frac{11.25}{9} = 1.25$

$\frac{10}{8} = 1.25$