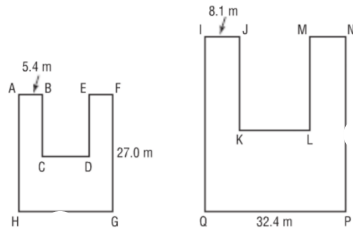


Sketch



d) Name the following properly

$\angle P$        $\angle NPQ$

$\angle F$        $\angle EFG$

A. Name the similar polygons.

$CD \{ FGHAB \sim KLMNPQIJ$

B. Write the ratio of corresponding sides.

$$\frac{CD}{KL} = \frac{DE}{ML} = \frac{EF}{MN} = \frac{FG}{NP} = \frac{GH}{PQ} = \frac{HA}{QI} = \frac{AB}{IJ} = \frac{BC}{JK}$$

C. Solve for HG and PN

$$\frac{AB}{IJ} = \frac{FG}{NP} = \frac{HG}{QP}$$

$$\frac{5.4}{8.1} = \frac{27}{NP} = \frac{HG}{32.4}$$

**Flip**

solve NP

$$\frac{27}{NP} = \frac{5.4}{8.1}$$

$$\frac{NP}{27} = \frac{8.1}{5.4}$$

NP = 40.5

solve HG

$$\frac{HG}{32.4} = \frac{5.4}{8.1}$$

HG = 21.6

**Similar Polygons**

1. The measures of corresponding angles must be equal

**AND**

2. The ratios of the lengths of corresponding sides must be equal.

**Similar Triangles**

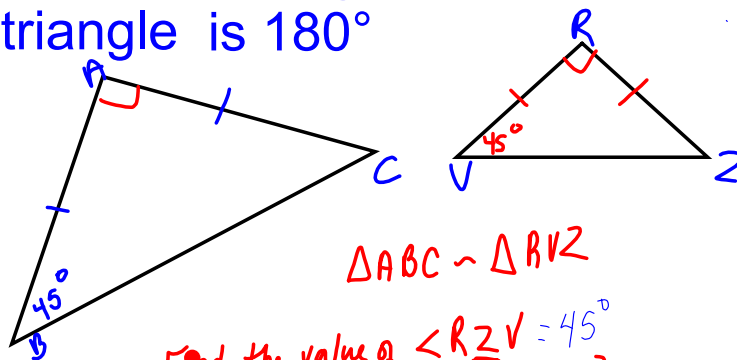
Triangles are a special polygon.

1. The measures of corresponding angles must be equal

**OR**

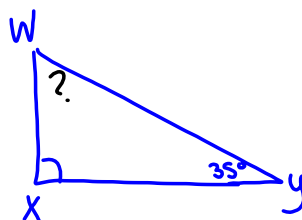
2. The ratios of the lengths of corresponding sides must be equal

sum of the angles of a triangle is  $180^\circ$



$\triangle ABC \sim \triangle RVZ$

Find the value of  $\angle RZV = 45^\circ$   
 $45 + 90 + \underline{45} = 180^\circ$



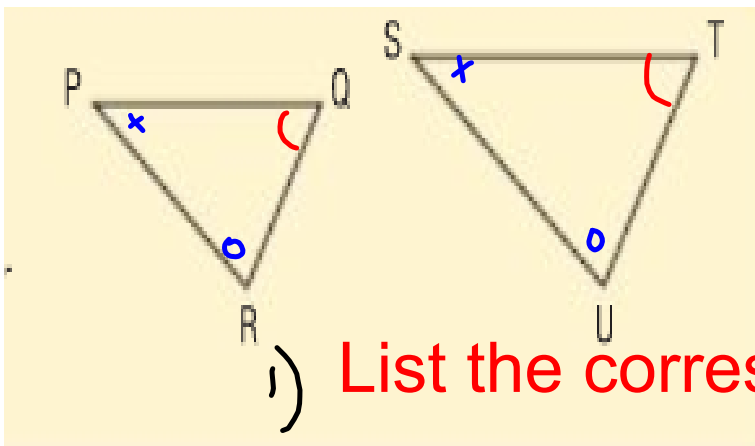
WXY  
 $\triangle WXY$

Name and give the measurement of the

Unknown angle.  $\angle YWX = 55^\circ$

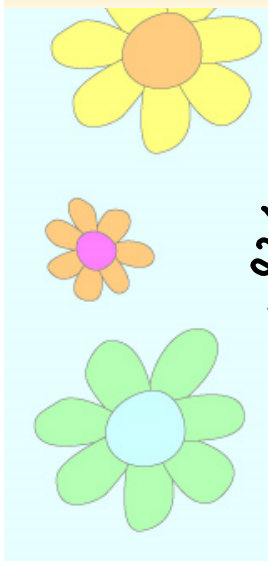
$90^\circ + 35^\circ + \underline{\quad} = 180^\circ$

|



3 letters to name angle

1) List the corresponding angles:



$$\angle PRQ = \angle SUT$$

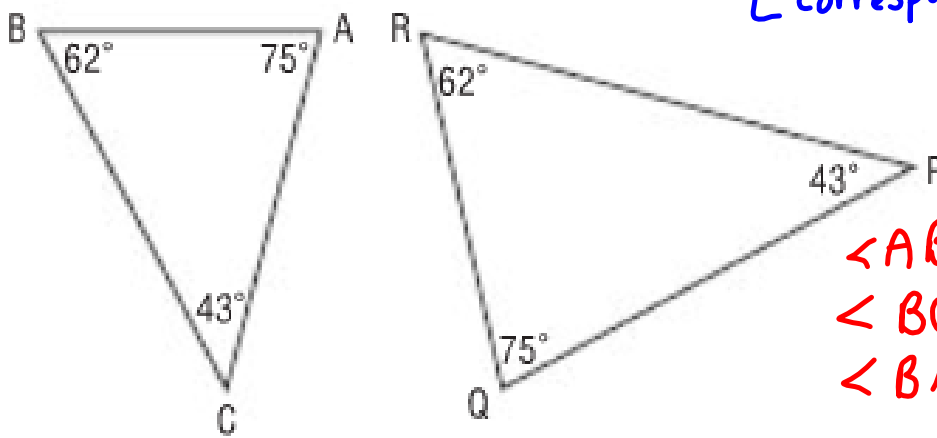
$$\angle PQR = \angle STU$$

$$\angle RPQ = \angle UST$$

2) Write a similarity statement:

$$\triangle PQR \sim \triangle STU$$

Are these triangles similar? What evidence DO you have?



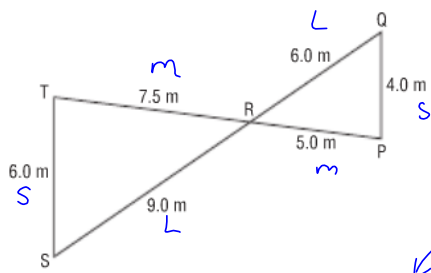
[corresponding angles]  
 ↖ 3 letters

$\angle ABC = \angle QRP$   
 $\angle BCA = \angle RPQ$   
 $\angle BAC = \angle RQP$

**If yes write a similarity statement.**



Identify the similar triangles.  
Justify your answer.



Are the triangles similar?

S = short  
m = medium  
L = long

Two letters to name a side

1. In triangle SRT list the sides shortest to longest

TS, TR, SR

2. In triangle RQP list the sides shortest to longest

QP, RP, QR

3. Give the ratio of corresponding sides.

Short = medium = long

$$\frac{ST}{QP} = \frac{RT}{RP} = \frac{SR}{QR}$$

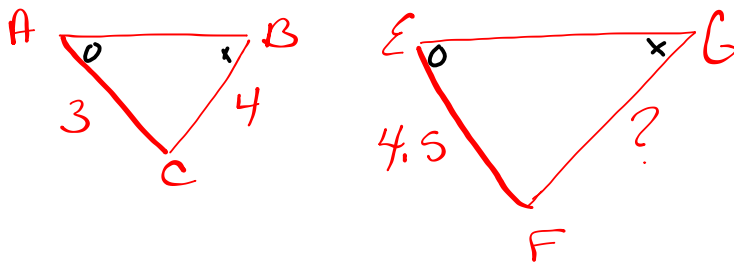
$$\frac{6}{4} = \frac{7.5}{5} = \frac{9}{6}$$

$$1.5 = 1.5 = 1.5$$

4. Write a similarity statement.

$$\triangle STR \sim \triangle QPR$$

Find side GF in similar Triangles's.



Ratio of corresponding sides:

$$\frac{AC}{EF} = \frac{AB}{EG} = \frac{BC}{GF}$$

$$\frac{3}{4.5} = \frac{AB}{EG} = \frac{4}{GF}$$

solve GF

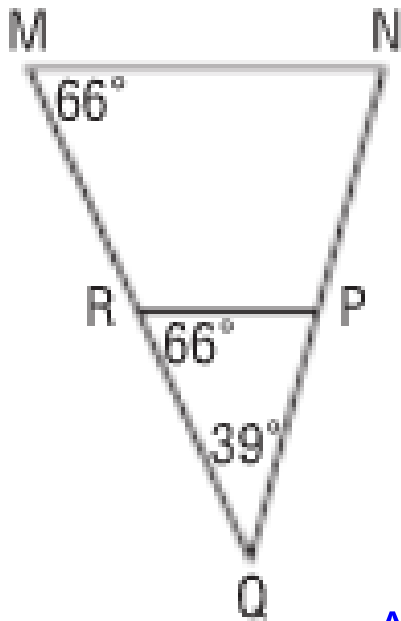
$$\frac{4}{GF} = \frac{3}{4.5}$$

~~Flip~~

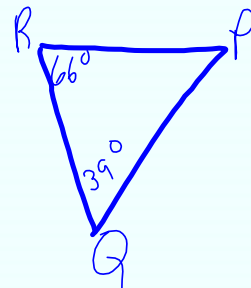
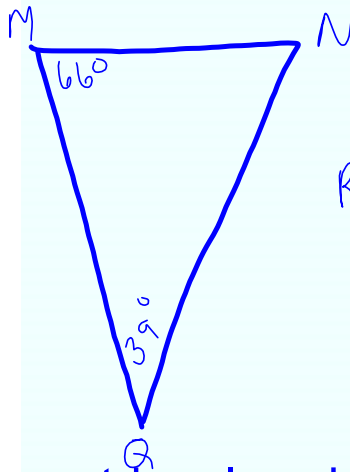
$$\frac{GF}{4} = \frac{4.5}{3} (4)$$

$$GF = \frac{18}{3}$$

$$GF = 6$$



Draw the two triangles separately!

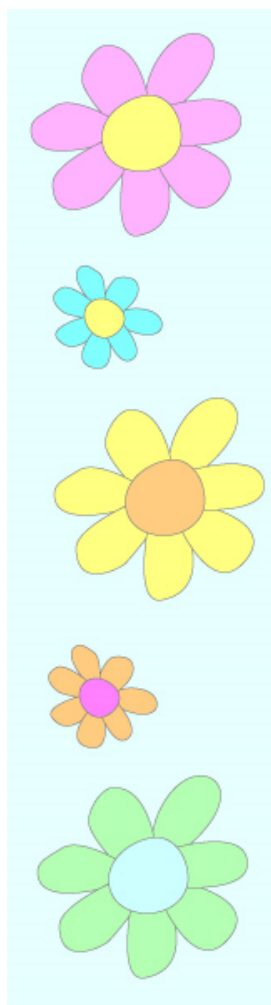


Are these triangles similar? write a similarity statement

Find the missing angle?

*use 3 letters.*





# Using Similar Triangles to Solve Problems...