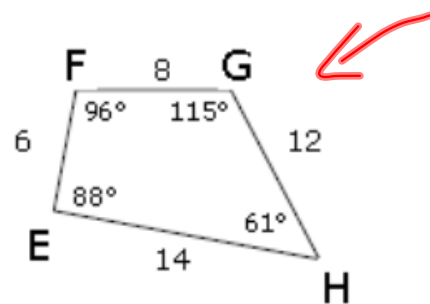
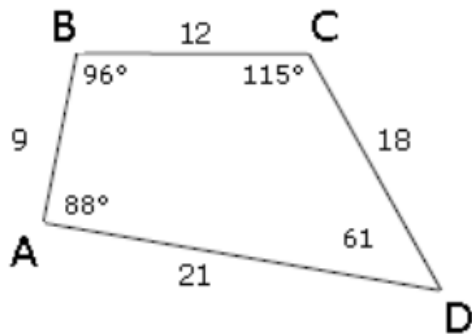


Warm-Up

April 12, 2011

Are these polygons similar?



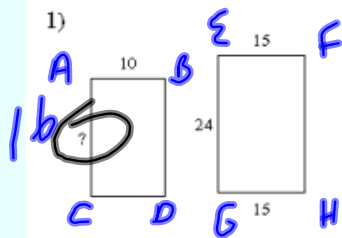
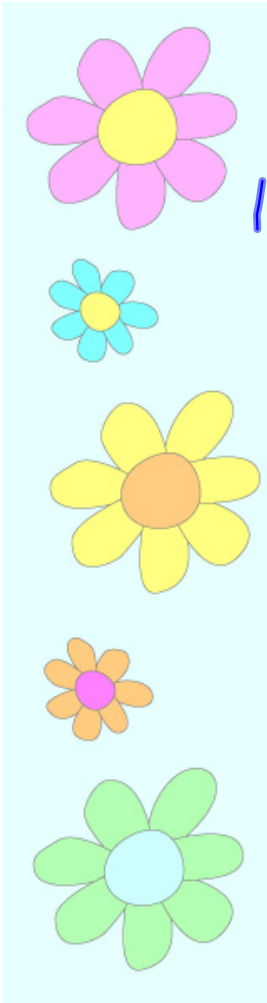
$$\begin{aligned} \angle B &= \angle F \\ \angle C &= \angle G \\ \angle A &= \angle E \\ \angle D &= \angle H \end{aligned}$$

$$\frac{BC}{FG} = \frac{CD}{GH} = \frac{AD}{EH} = \frac{BA}{FE}$$

$$\frac{12}{8} = \frac{18}{12} = \frac{21}{14} = \frac{9}{6}$$

$$1.5 = 1.5 = 1.5 = 1.5$$

$$EFGH \sim ABCD$$



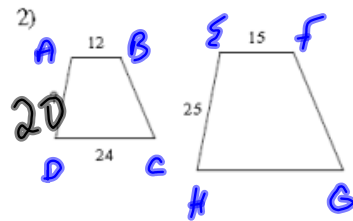
$$\frac{AB}{EF} = \frac{AC}{EG}$$

$$\frac{10}{15} = \frac{AC}{24}$$

0.6 0.6

$$\frac{240}{15} = x$$

$$16 = x$$



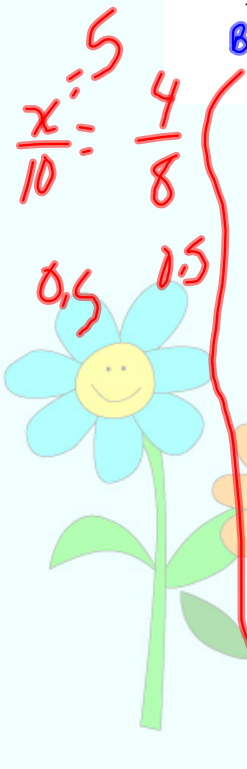
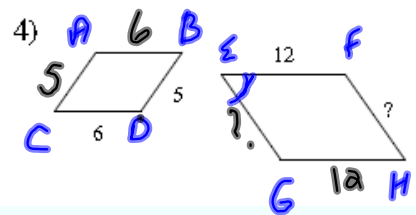
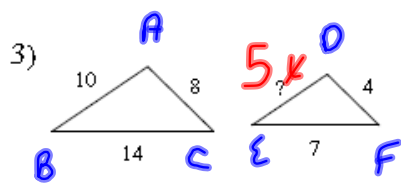
$$\frac{AB}{EF} = \frac{AD}{EH}$$

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

0.8 0.8

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

$$20 = x$$



$$\frac{x}{10} = \frac{5}{8}$$

$$\frac{4}{8}$$

0,5

1,5

$$\frac{AB}{DE} = \frac{AC}{DF}$$

$$\frac{10}{5} = \frac{8}{4}$$

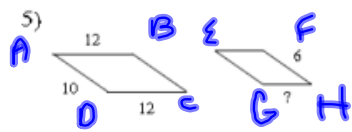
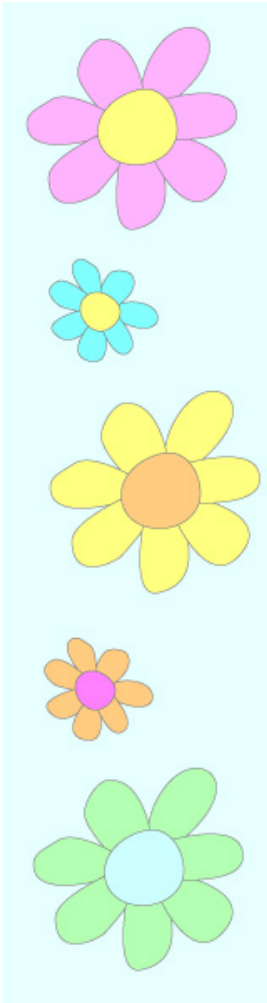
$$\frac{x}{10} = \frac{4}{8}$$

$$x = 5$$

$$\frac{AB}{FG} = \frac{AC}{FH}$$

$$\frac{6}{12} = \frac{5}{?}$$

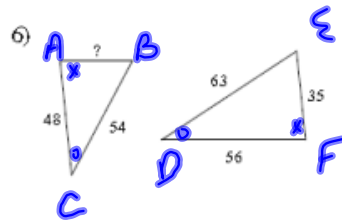
$$x = 10$$



$$\frac{AB}{HF} = \frac{AD}{HG}$$

$$\frac{12}{6} = \frac{10}{HG}$$

$$HG = 5$$



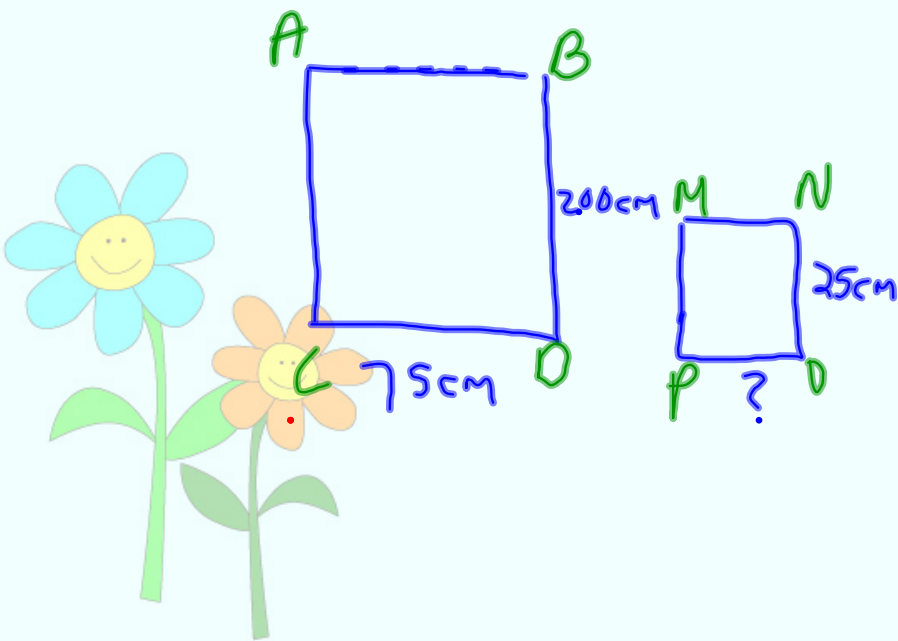
$$\frac{AB}{FE} = \frac{AC}{FD}$$

$$\frac{?}{35} = \frac{48}{56}$$

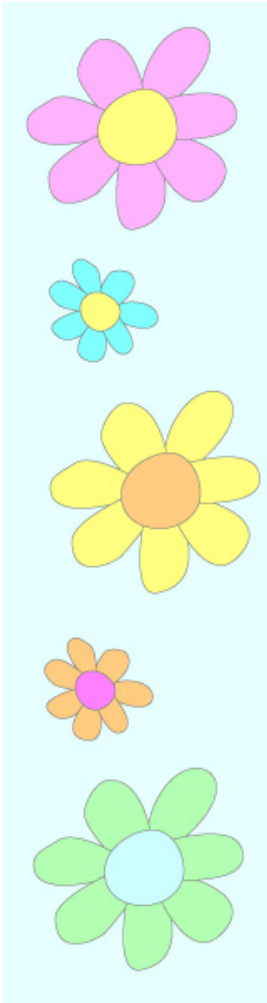
$$? = 30$$

13. A rectangular door has height 200 cm and width 75 cm. It is similar to a door in a doll's house. The height of the doll's house door is 25 cm.

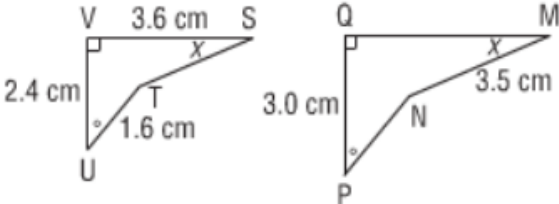
- a) Sketch and label both doors.
- b) Calculate the width of the doll's house door.



$$\frac{25}{200} = \frac{?}{75}$$



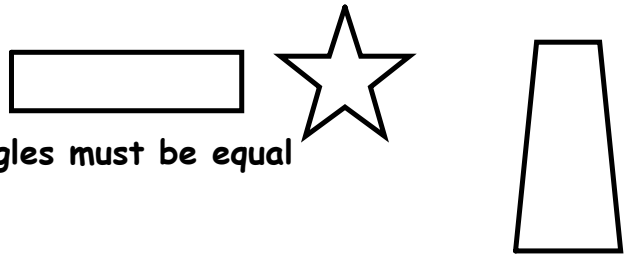
8. These two quadrilaterals are similar.



Calculate the length of: a) PN b) TS

Handwritten red annotations: a red arrow points from the text 'a) PN' to the number '2', and another red arrow points from the text 'b) TS' to the number '2.8'.

Similar Polygons



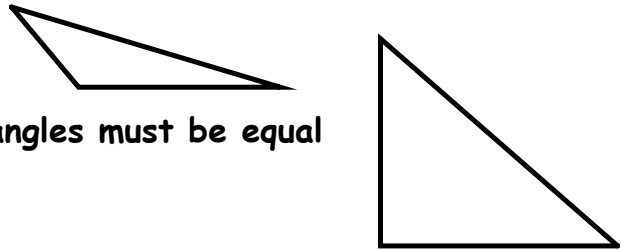
1. The measures of corresponding angles must be equal

AND

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

Similar Triangles

Triangles are a special polygon.

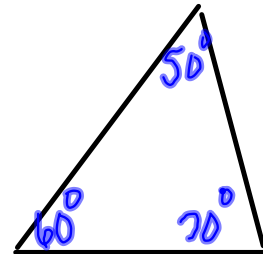
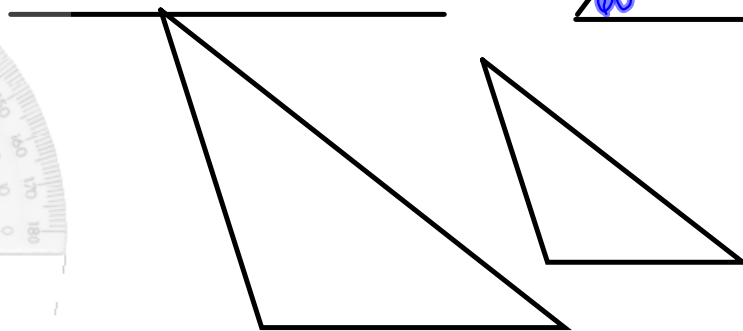
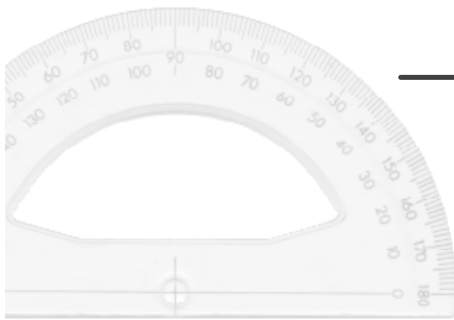


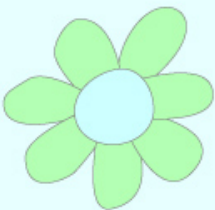
1. The measures of corresponding angles must be equal

OR

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

* Remember the sum of angles in a triangle = 180°

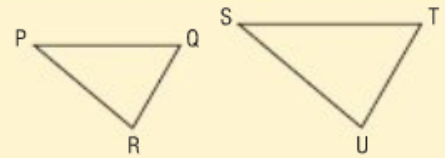




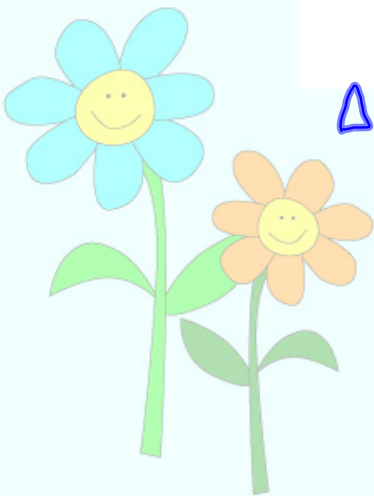
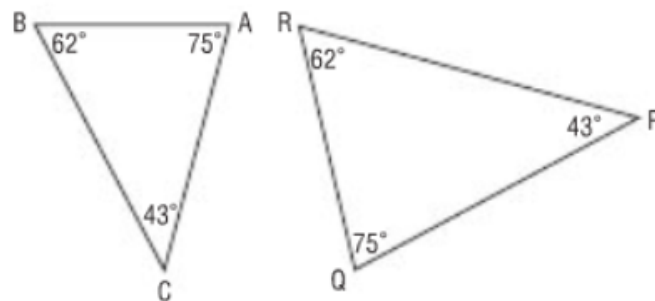
► **Properties of Similar Triangles**

To identify that $\triangle PQR$ and $\triangle STU$ are similar, we only need to know that:

- $\angle P = \angle S$ and $\angle Q = \angle T$ and $\angle R = \angle U$; or
- $\frac{PQ}{ST} = \frac{QR}{TU} = \frac{PR}{SU}$

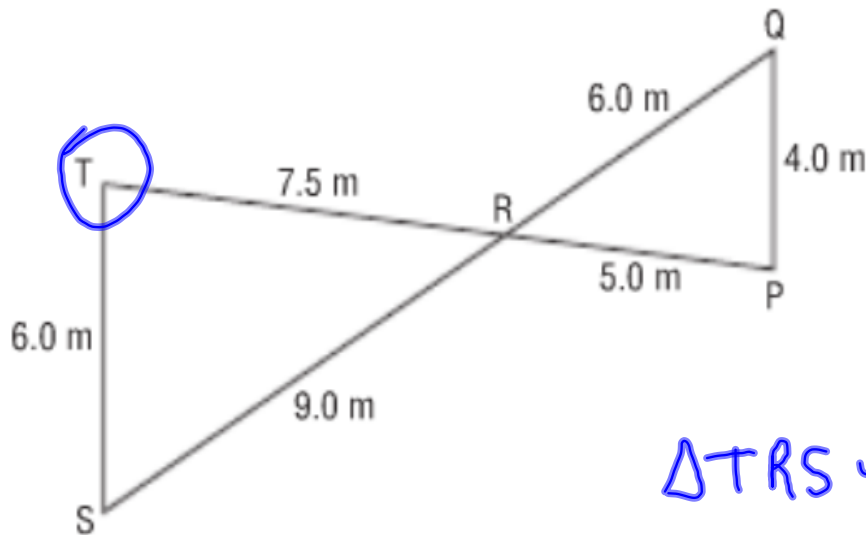


Are these triangles similar? What evidence DO you have?



$$\triangle ABC \sim \triangle RQP$$
$$\angle B = \angle R$$
$$\angle A = \angle Q$$
$$\angle C = \angle P$$

Identify the similar triangles.
Justify your answer.



shortest
middle

$$\frac{TS}{PQ} = \frac{TR}{PR} = \frac{SR}{QR}$$

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

$$1.5 = 1.5 = 1.5$$

$$\triangle TRS \sim \triangle PRQ$$

1. In triangle SRT list the sides shortest to longest
2. In triangle RQP list the sides shortest to longest

a
b a

Sketch
triangles

Page 349 #4 a-d

#5 a, b

#6 a