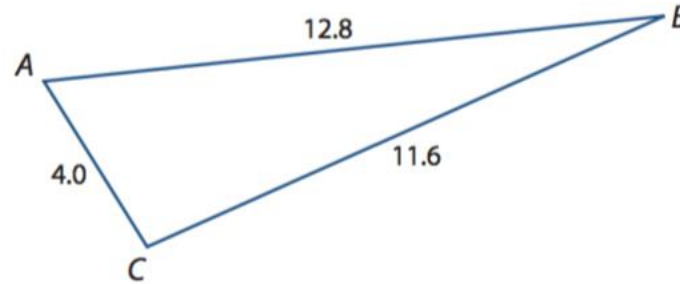
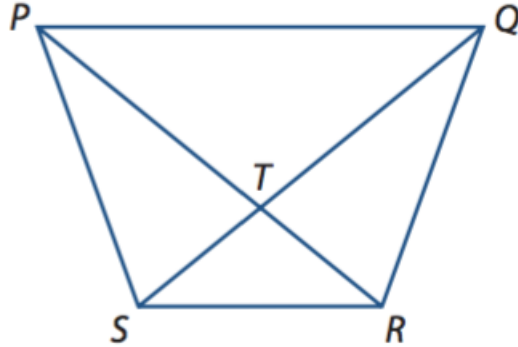


Each triangle described in the table below is similar to $\triangle ABC$. For each triangle, use this fact and the additional given to determine the remaining table entries.



Triangle Angle Measure			Shortest Side Length	Longest Side Length	Third Side Length	Scale factor from $\triangle ABC$
$m\angle A=64$	$m\angle A=18$	$m\angle A=98$	AC = 4.0	AB = 12.8	BC = 11.6	1
$m\angle D=?$	$m\angle E=64$	$m\angle F=18$				2
$m\angle G=?$	$m\angle H=?$	$m\angle I=?$		IG = 6.4	GH = 5.8	
$m\angle J=?$	$m\angle K=18$	$m\angle L=98$	JL = 14.0			

In the diagram below, \overline{PR} and \overline{QS} are diagonals of quadrilateral PQRS, and intersect at point T. $\overline{PS} \cong \overline{QR}$, $\overline{PT} \cong \overline{QT}$, and $\overline{ST} \cong \overline{RT}$.

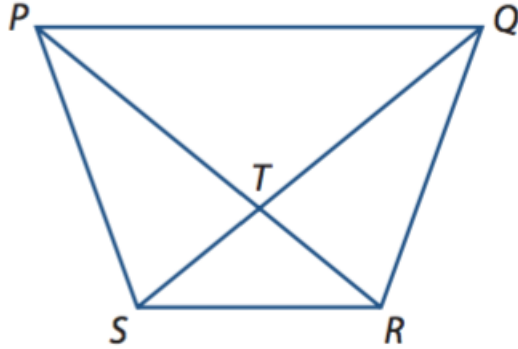


Identify and name eight triangles in the diagram.

Which pairs of of the eight triangles seem to be congruent? Name each pair.

Using the given information, prove or disprove that each identified pair of triangles are congruent.

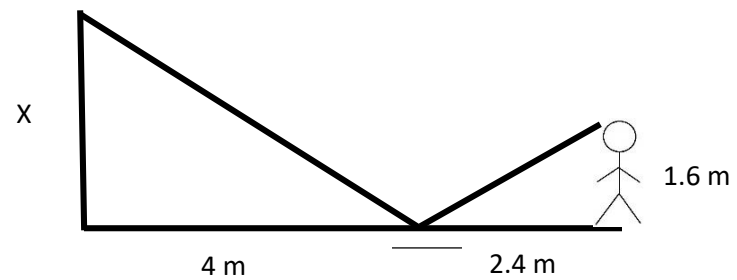
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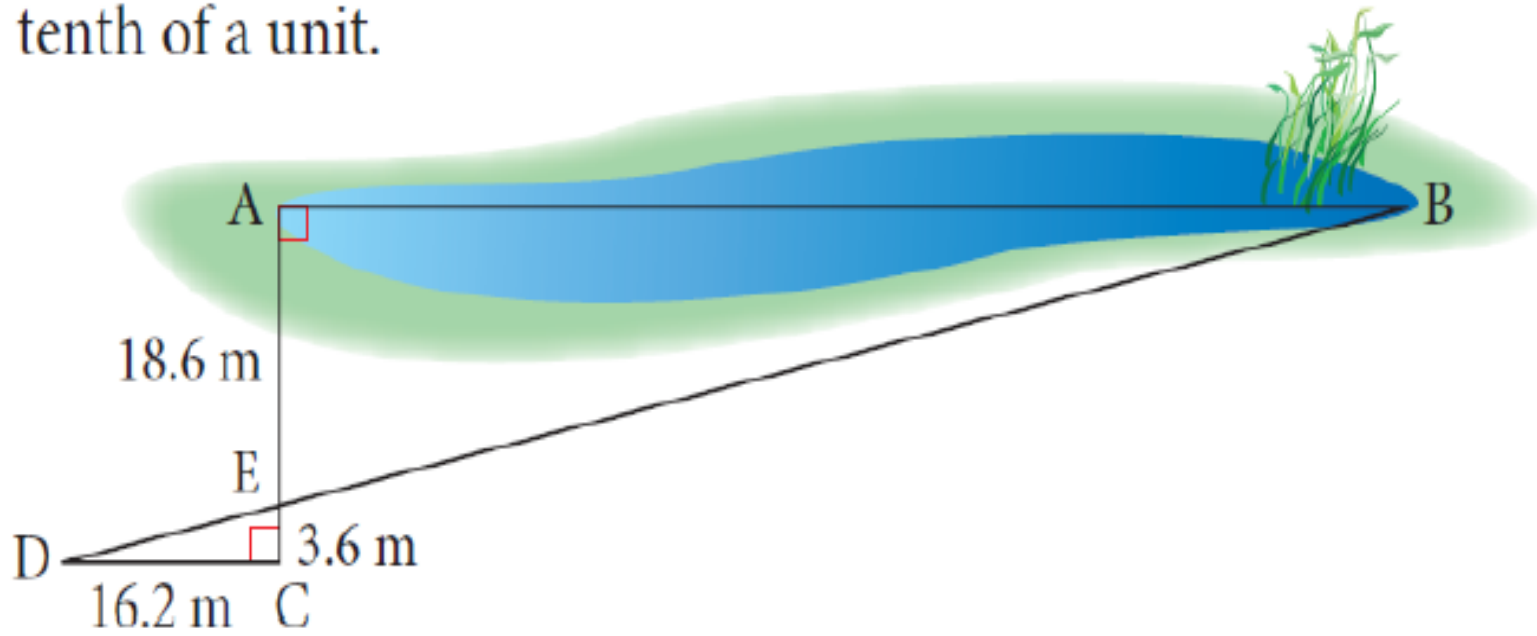
Which of the remaining pairs of triangles are similar? Provide an argument to support your answer.

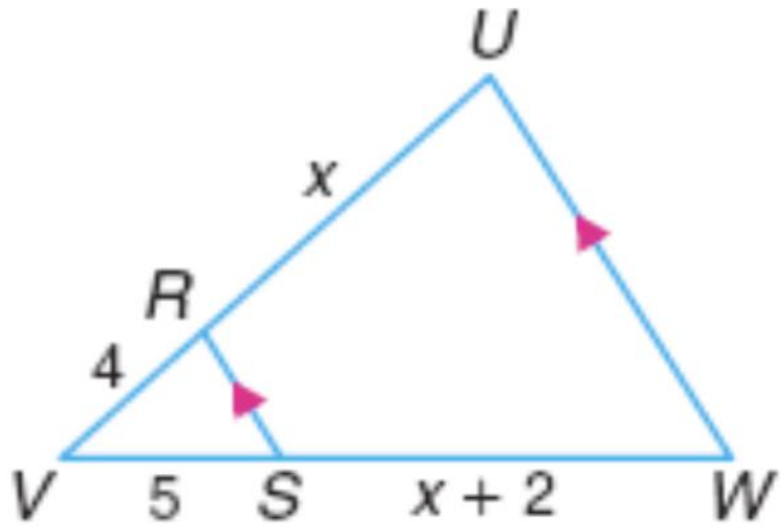
What can you conclude about $\overline{PQ} \cong \overline{SR}$ when you know the given information? Write a proof for your claim.

A statue, honoring Ray Hnatyshyn (1934-2002), can be found on Spadina Crescent East, near the University Bridge in Saskatoon. Use the information below to determine the unknown height of the statue.



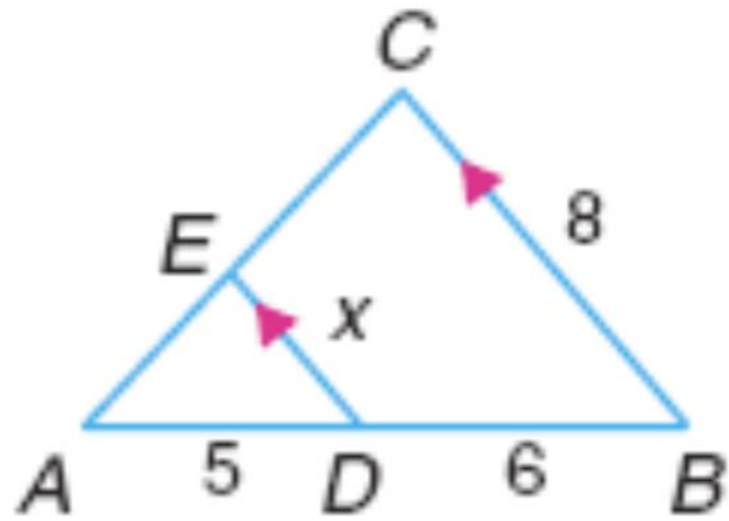
To calculate the length of a marsh, a surveyor produced the following diagram. Find the length of the marsh to the nearest tenth of a unit.



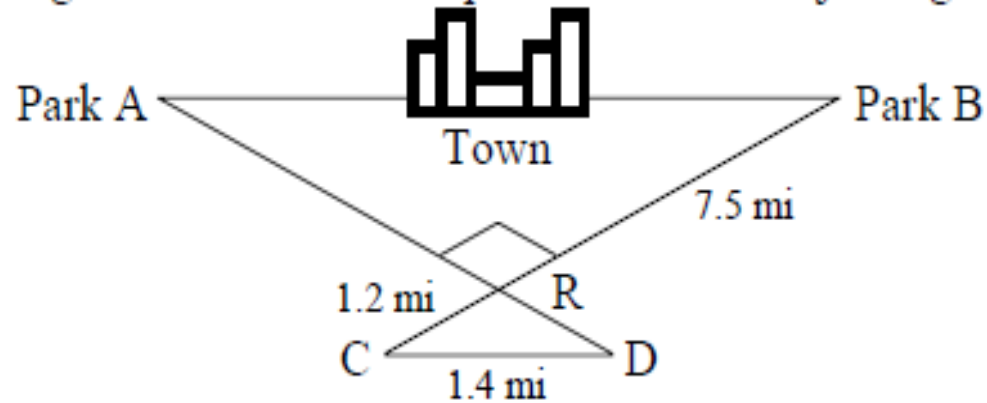


Find the value of x . Find the length of VW .

Find the value of x .



Mason Construction wants to connect two parks on opposite sides of town with a road. Surveyors have laid out the map as shown. The road can be built through the town or around the town through point R. The roads intersect at a right angle at point R. The line joining Park A to Park B is parallel to the line joining C and D.

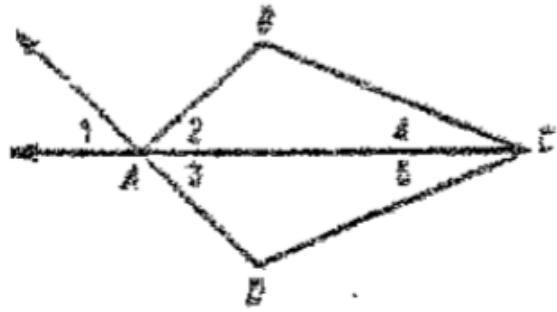


Note: The figure is not drawn to scale.

Provide an argument to justify that $\triangle ABR \sim \triangle DCR$

Determine the distance between the parks.

4. Given: $\angle 1 \cong \angle 2$
 $\angle 4 \cong \angle 5$
 Prove: $\overline{BC} \cong \overline{DC}$



Statements	Reasons
a. $\angle 1 \cong \angle 2$	a. _____
b. $\angle 1 \cong \angle 3$	b. _____
c. $\angle 2 \cong \angle 3$	c. _____
d. $\overline{AC} \cong \overline{AC}$	d. _____
e. $\angle 4 \cong \angle 5$	e. _____
f. $\triangle ABC \cong \triangle ADC$	f. _____
g. $\overline{BC} \cong \overline{DC}$	g. _____

