

Notes on Congruent Triangles

(Geometry Book Sections 4.3- 4.5)

Corresponding Parts of Congruent Triangles

Triangles that are the same size and the same shape are **congruent triangles**. Each triangle has 3 angles and 3 sides. If all 6 of the corresponding parts of 2 triangles are congruent, Then the triangles are congruent.



If $\triangle ABC$ is congruent to $\triangle EFG$, the vertices of the two triangles correspond in the same order as the letters naming the triangles.

$$\triangle ABC \cong \triangle EFG$$

The correspondence of the vertices can be used to name the corresponding congruent sides and angles of the 2 triangles. The corresponding sides and angles can be determined from congruence statements by following the order of the letters:

$$\angle A \cong \angle E \quad \angle B \cong \angle F \quad \angle C \cong \angle G$$

$$\overline{AB} \cong \overline{EF} \quad \overline{BC} \cong \overline{FG} \quad \overline{AC} \cong \overline{EG}$$

1. If $\triangle RST \cong \triangle UWV$, complete each pair of congruent parts.

$$\angle R \cong \underline{\hspace{2cm}}$$

$$\underline{\hspace{2cm}} \cong \angle W$$

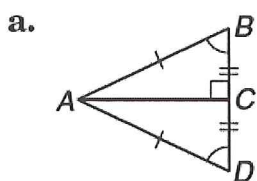
$$\angle T \cong \underline{\hspace{2cm}}$$

$$\overline{RT} \cong \underline{\hspace{2cm}}$$

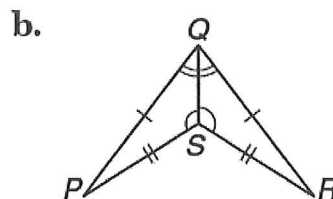
$$\underline{\hspace{2cm}} \cong \overline{UW}$$

$$\underline{\hspace{2cm}} \cong \overline{WV}$$

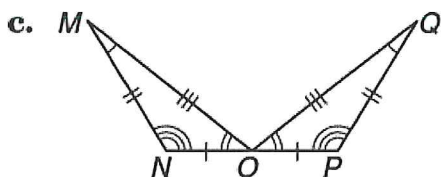
Identify the congruent triangles and all congruent corresponding sides, and congruent corresponding angles.



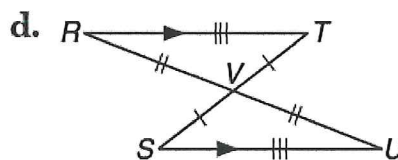
Congruent Corresponding Angles	Congruent Corresponding Sides
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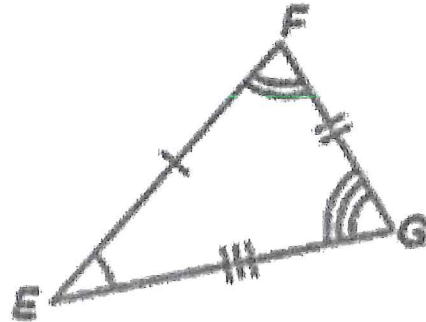
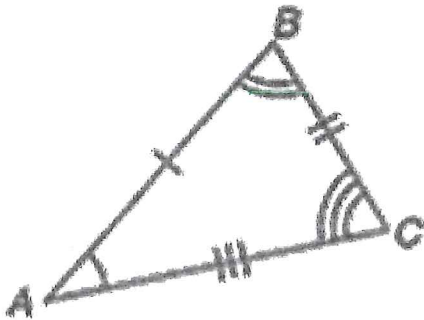
Key

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1. If $\triangle RST \cong \triangle UWV$, complete each pair of congruent parts.

$$\angle R \cong \underline{\angle U}$$

$$\underline{\angle S} \cong \angle W$$

$$\angle T \cong \underline{\angle V}$$

$$\overline{RT} \cong \underline{\overline{UV}}$$

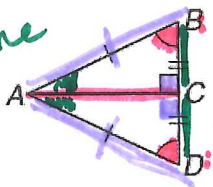
$$\underline{\overline{RS}} \cong \overline{UW}$$

$$\underline{\overline{ST}} \cong \overline{WV}$$

Identify the congruent triangles and all congruent corresponding sides, and congruent corresponding angles.

$\triangle ABC \cong \triangle ADC$

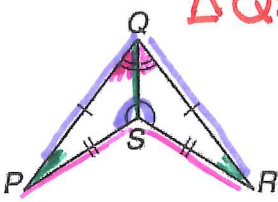
must name w/ 3 pts →



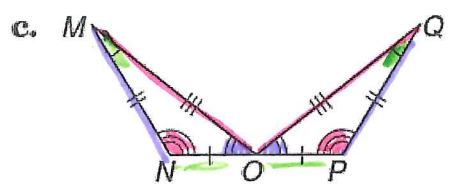
Congruent Corresponding Angles	Congruent Corresponding Sides
$\angle B \cong \angle D$	$AC \cong AC$ (Reflexive)
$\angle BAC \cong \angle DAC$	$BC \cong DC$
$\angle ACB \cong \angle ACD$	$AB \cong AD$

$\triangle QSR \cong \triangle QSP$

b.

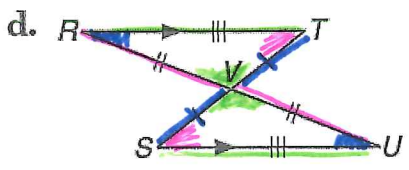


Congruent Corresponding Angles	Congruent Corresponding Sides
$\angle P \cong \angle R$	$QS \cong QS$
$\angle PQS \cong \angle RQS$	$PS \cong SR$
$\angle PSQ \cong \angle RSQ$	$QR \cong QP$



$\triangle NOM \cong \triangle POQ$

Congruent Corresponding Angles	Congruent Corresponding Sides
$\angle QOP \cong \angle MON$	$MN \cong QP$
$\angle N \cong \angle P$	$OQ \cong MO$
$\angle M \cong \angle Q$	$NO \cong OP$



$\triangle RVT \cong \triangle UVS$

Congruent Corresponding Angles	Congruent Corresponding Sides
$\angle RVT \cong \angle UVS$	$RT \cong SU$
$\angle T \cong \angle S$	$VU \cong VR$
$\angle R \cong \angle U$	$VS \cong VT$