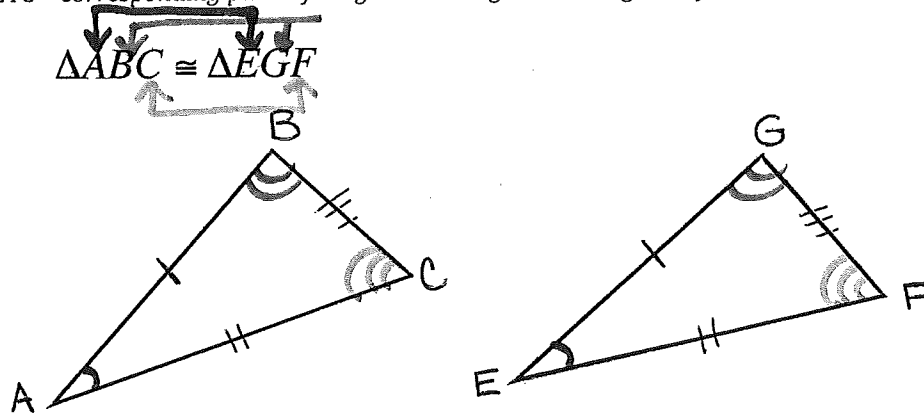


4-3 Congruent Triangles

Definition of Congruent Triangles (CPCTC) - Two triangles are congruent if and only if their corresponding parts are congruent.

(CPCTC - corresponding parts of congruent triangles are congruent)



Angles

$$\underline{\angle A \cong \angle E}$$

$$\underline{\angle B \cong \angle G}$$

$$\underline{\angle C \cong \angle F}$$

Sides

$$\underline{\overline{AB} \cong \overline{EG}}$$

$$\underline{\overline{AC} \cong \overline{EF}}$$

$$\underline{\overline{BC} \cong \overline{GF}}$$

Theorems - Congruence of triangles is reflexive, symmetric and transitive.

- Reflexive $\triangle ABC \cong \triangle ABC$
- Symmetric If $\triangle ABC \cong \triangle EGF$, then $\triangle EGF \cong \triangle ABC$.
- Transitive If $\triangle ABC \cong \triangle EGF$ and $\triangle EGF \cong \triangle HJK$, then $\triangle ABC \cong \triangle HJK$.

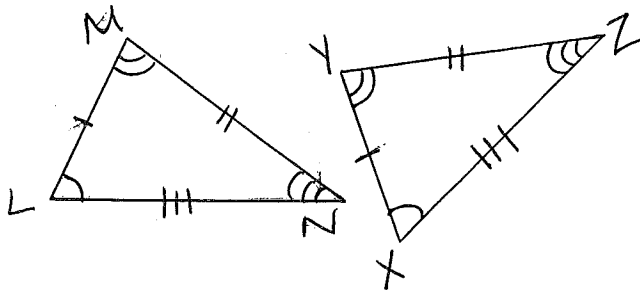
Example: Name the congruent angles and sides for each pair of congruent triangles.

$$\triangle LMN \cong \triangle XYZ$$

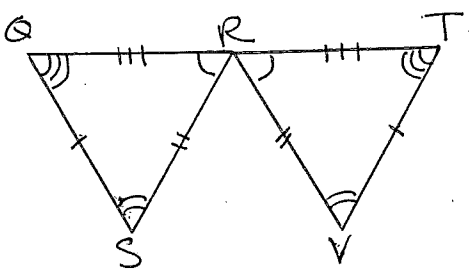
$$\angle L \cong \angle X \quad \overline{LM} \cong \overline{XY}$$

$$\angle M \cong \angle Y \quad \overline{MN} \cong \overline{YZ}$$

$$\angle N \cong \angle Z \quad \overline{NL} \cong \overline{ZX}$$



EX



$QR=12, RS=23, QS=24,$
 $RT=2x, TV=4y, RV=23$

Write the Congruence Statement.