

4-2

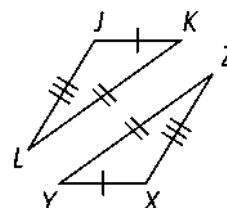
Triangle Congruence by SSS and SAS

You can prove that triangles are congruent using the two postulates below.

Postulate 4-1: Side-Side-Side (SSS) Postulate

If all three sides of a triangle are congruent to all three sides of another triangle, then those two triangles are congruent.

If $\overline{JK} \cong \overline{XY}$, $\overline{KL} \cong \overline{YZ}$, and $\overline{JL} \cong \overline{XZ}$, then $\triangle JKL \cong \triangle XYZ$.

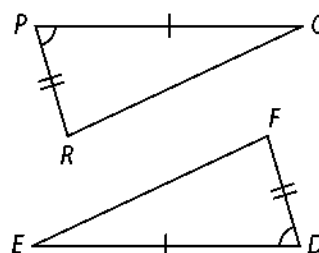


In a triangle, the angle formed by any two sides is called the *included angle* for those sides.

Postulate 4-2: Side-Angle-Side (SAS) Postulate

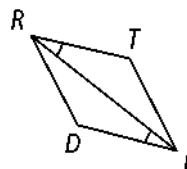
If two sides and the included angle of a triangle are congruent to two sides and the included angle of another triangle, then those two triangles are congruent.

If $\overline{PQ} \cong \overline{DE}$, $\overline{PR} \cong \overline{DF}$, and $\angle P \cong \angle D$, then $\triangle PQR \cong \triangle DEF$.
 $\angle P$ is included by \overline{QP} and \overline{PR} . $\angle D$ is included by \overline{ED} and \overline{DF} .

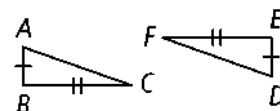


Exercises

1. What other information do you need to prove $\triangle TRF \cong \triangle DFR$ by SAS? Explain.

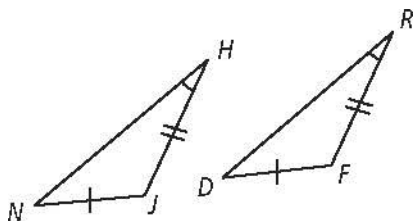


2. What other information do you need to prove $\triangle ABC \cong \triangle DEF$ by SAS? Explain.

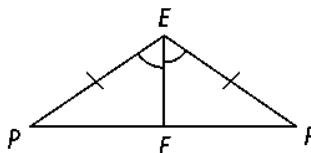


Would you use SSS or SAS to prove the triangles congruent? If there is not enough information to prove the triangles congruent by SSS or SAS, write *not enough information*. Explain your answer.

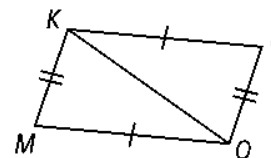
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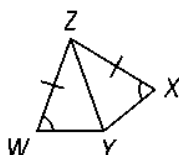
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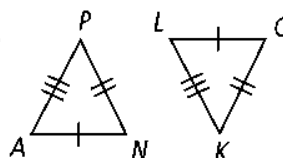
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10.

