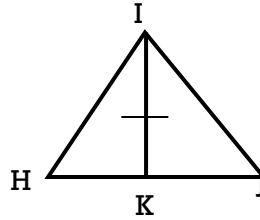# Geometry: Proving Triangles Congruent Tip Sheet

Here's a resource sheet to help you use SSS, SAS, AAS, ASA, or HL (right triangles)
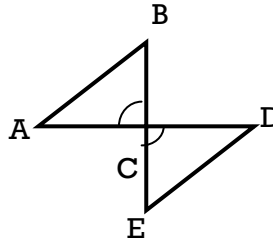
If you have an overlapping side

$\overline{IK} \cong \overline{IK}$ ➔ Reflexive Property

If you have vertical angles (bowtie shape)

$\angle ACB \cong \angle DCE$ ➔ V.A.T

If you have right angles

$\angle JKL$ and $\angle ONM$ are right angles ➔ Given

$\angle JKL \cong \angle ONM$ ➔ All right angles are congruent

$\triangle JKL \,\&\, \triangle ONM$ are right triangles ➔ def of right $\triangle$ (use before HL)
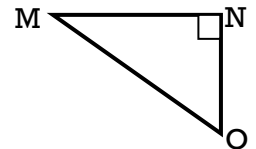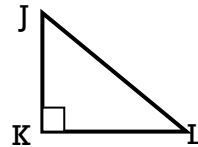
If you have a midpoint

X is the midpoint of $\overline{WY}$ ➔ Given

$\overline{WX} \cong \overline{YX}$ ➔ definition of midpoint
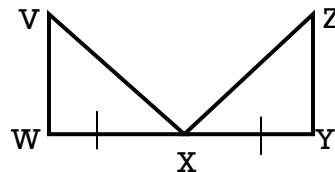
(Continued on other side)

If you have perpendicular segments

$\overline{SQ} \perp \overline{PR}$ → Given

∠ PQS & ∠ RQS are right angles → def of perpendicular

∠ PQS ≅ ∠ RQS → all right angles are congruent
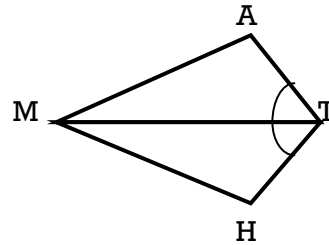
△ PQS & △ RQS are right triangles → def of right triangle (use before HL)
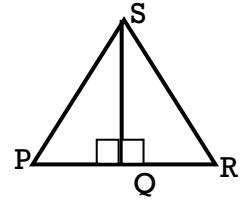
If you have an angle bisector

$\overline{MT}$ bisects ∠ ATH → Given

∠ ATM ≅ ∠ HTM → definition of angle bisector

If you have a perpendicular $\perp$ bisector

$\overline{IK}$ is the perpendicular bisector of $\overline{HJ}$ → Given

∠ IKH & ∠ IKJ are right angles → def of perpendicular

∠ IKH ≅ ∠ IKJ → all right angles are congruent

$\overline{HK} \cong \overline{JK}$ → definition of bisector