

Geometry Reference

9th Grade

Angle relationships, triangle rules, congruence and the proof vocabulary.

ANGLE RELATIONSHIPS

Linear pair	supplementary — add to 180°
Vertical angles	congruent
Corresponding (parallel lines)	congruent
Alternate interior	congruent
Same-side interior	supplementary

TRIANGLE RULES

Angle sum	the three angles add to 180°
Exterior angle	equals the two remote interior angles added
Isosceles	base angles opposite equal sides are equal
Triangle inequality	any two sides must add to more than the third
Midsegment	parallel to the third side and half its length

PROVING TRIANGLES

Congruent: **SSS · SAS · ASA · AAS · HL (right triangles)**

Similar: **AA · SSS (ratios) · SAS (ratio + included angle)**

Not a shortcut: SSA and AAA. AAA proves similar, never congruent.

Mark the given information on the diagram before writing a single line of proof.