

Similar Triangles

9th Grade

Same shape, different size — and the scale factor rules for length, area and volume.

Similar figures have equal corresponding angles and proportional corresponding sides.

AA · SSS ratios · SAS ratio

AA

two angles equal

Enough on its own — the third follows.

Scale factor k

lengths $\times k$

Perimeter scales the same way.

Area

$\times k^2$

Two dimensions, so squared.

Volume

$\times k^3$

Three dimensions, so cubed.

THE COMMON MISTAKE

$\times$ doubling lengths doubles area

✓ it quadruples it

Area involves two dimensions, so the factor applies twice.

Congruent is the special case of similar where $k = 1$.