MIND MAP

TRIANGLES

Congruent Shapes

Two figures are Congruent if they have same shape and same size.

1. Same Shape
2. Same Size
3. Corresponding angles are congruent

Similar Figures

Two figures are similar if they have same shape but not size.

1. Same Shape
2. Different Size
3. Corresponding angles are congruent

Congruency & Similarity Symbol

$\cong$ Same Shape

Congruency

Same Size

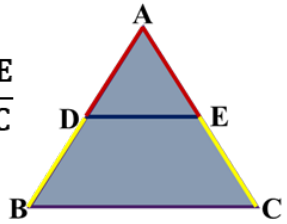
Similarity

$\sim$ Same Shape

Thales Theorem or BPT

$DE \parallel BC$

$\frac{AD}{DB} = \frac{AE}{EC}$



Criteria For Similarity of Triangles

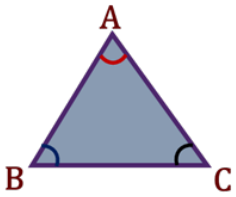
Two triangles are similar if :

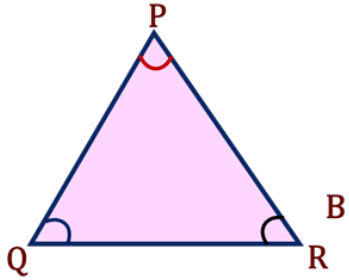
1. their corresponding angles are equal
2. their corresponding sides are in same ratio(or proportion).

ΔABC and ΔPQR are similar, if

$\angle A = \angle P, \quad \angle B = \angle Q, \quad \angle C = \angle R$

$\frac{AB}{PQ} = \frac{BC}{QR} = \frac{AC}{PR}$





Criteria For Similarity of Triangles

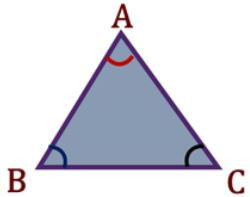
- ✓ AAA or AA Similarity
- ✓ SSS Similarity
- ✓ SAS Similarity

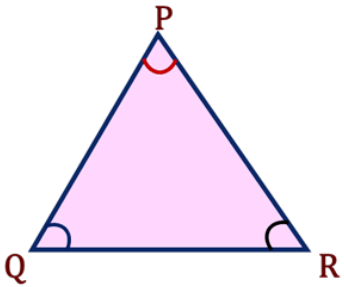
AAA Similarity

Theorem

If in two triangles, the corresponding angles are equal, then their corresponding sides are in the same ratio and hence the two triangles are similar.

This criterion is referred to as the AAA (Angle-Angle-Angle) criterion of similarity of two triangles.



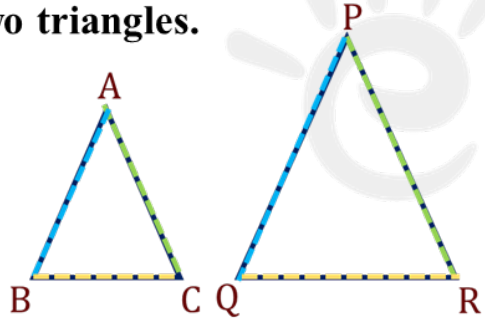


SSS Similarity

Theorem

If in two triangles, sides of one triangle are proportional to (i.e., in the same ratio of) the sides of the other triangle, then their corresponding angles are equal and hence the two triangles are similar.

This criterion is referred to as the SSS (Side-Side-Side) similarity criterion for two triangles.



SAS Similarity

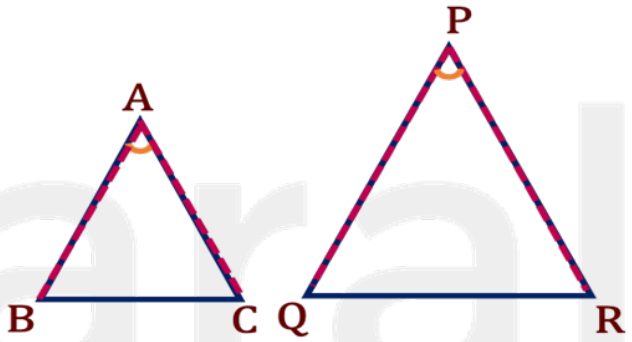
Theorem

If one angle of a triangle is equal to one angle of the other triangle and the sides including these angles are proportional then the two triangles are similar.

MIND MAP

TRIANGLES

This criterion is referred to as the SAS (Side-Angle-Side) similarity criterion for two



Theorem 6.7 : If a perpendicular is drawn from the vertex of the right angle of a right triangle to the hypotenuse then triangles on both sides of the perpendicular are similar to the whole triangle and to each other