



CLASS – 10

MATHEMATICS

Chapter – 6

Triangles

Part – 1

Similar Figures

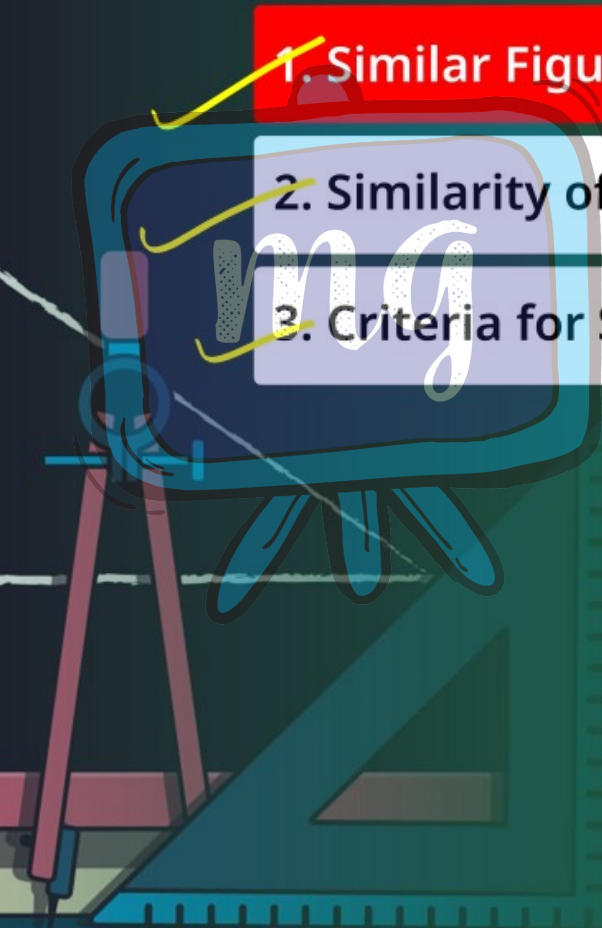
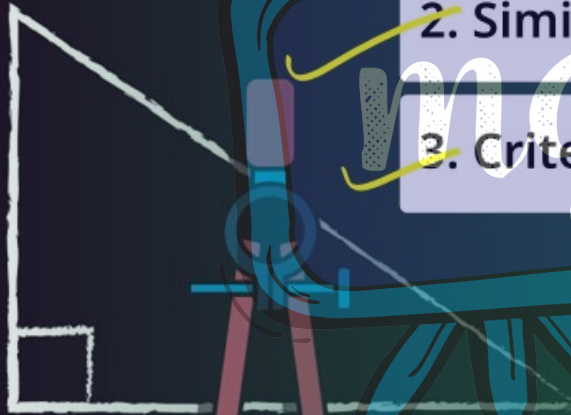
Shubham Tiwari

OVERVIEW

1. Similar Figures

2. Similarity of Triangles

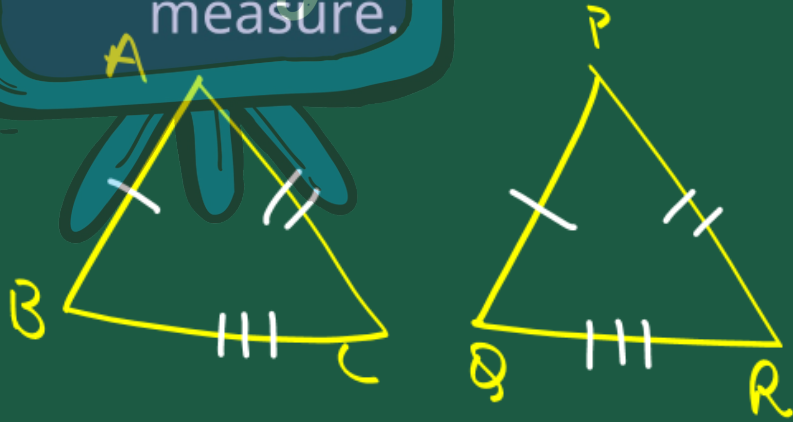
3. Criteria for Similarity of Triangles



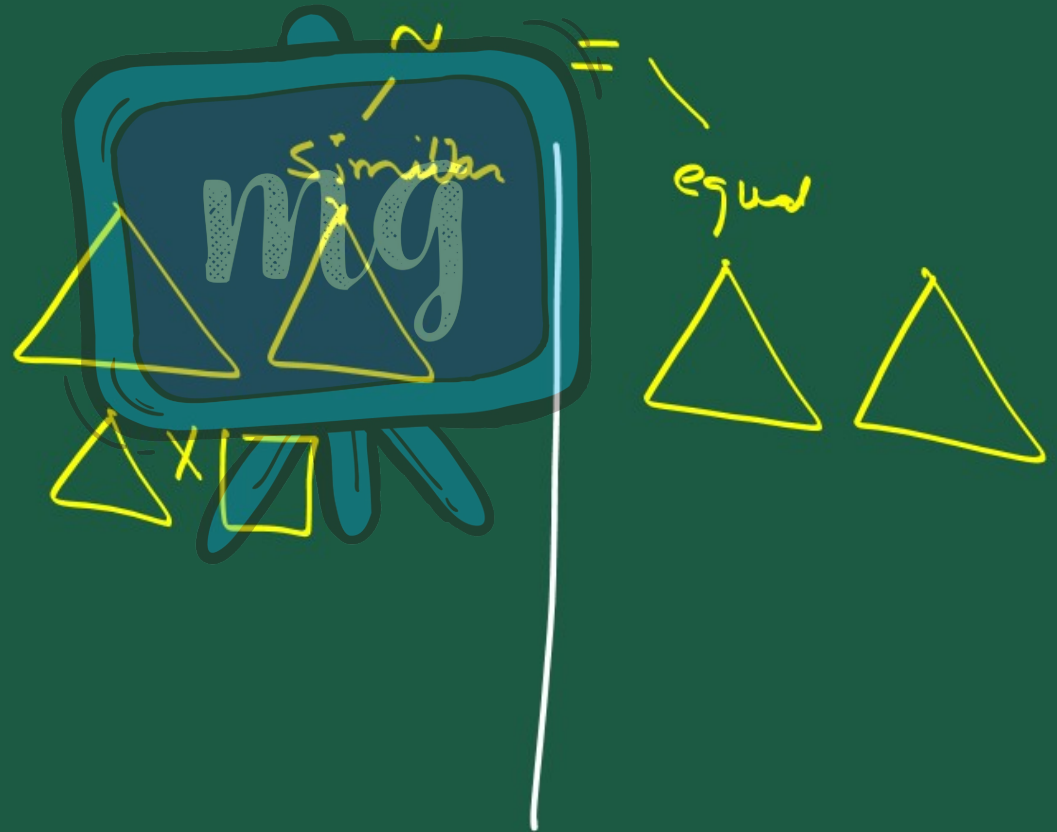
CONGRUENT FIGURES

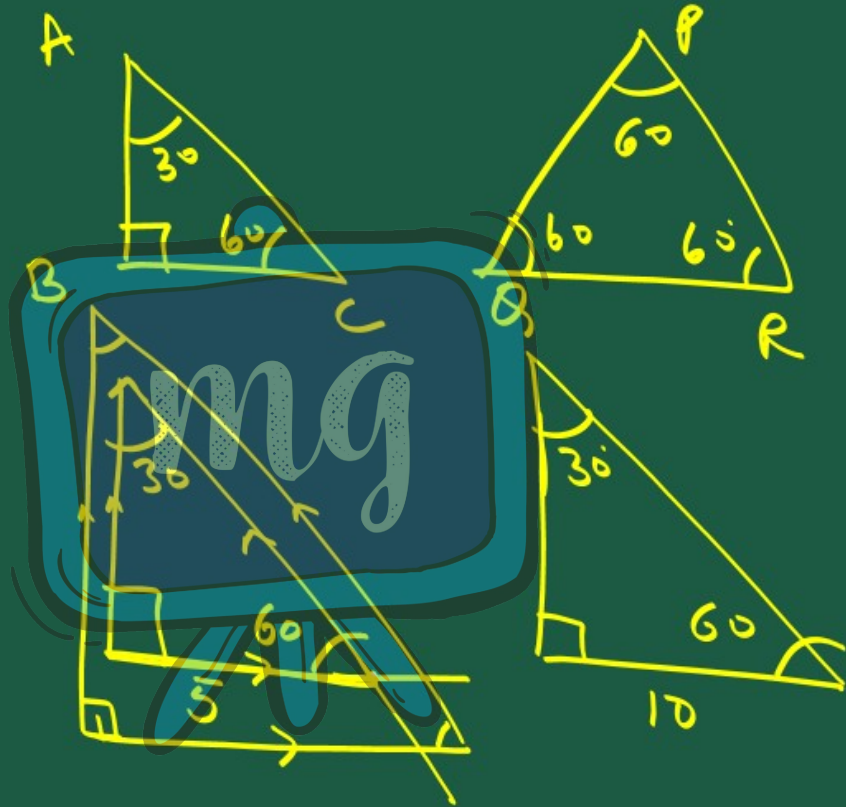
- SAS
- ASA
- RHS
- SSS

Two figures are said to be congruent if all the corresponding sides and all the corresponding angles are equal in measure.



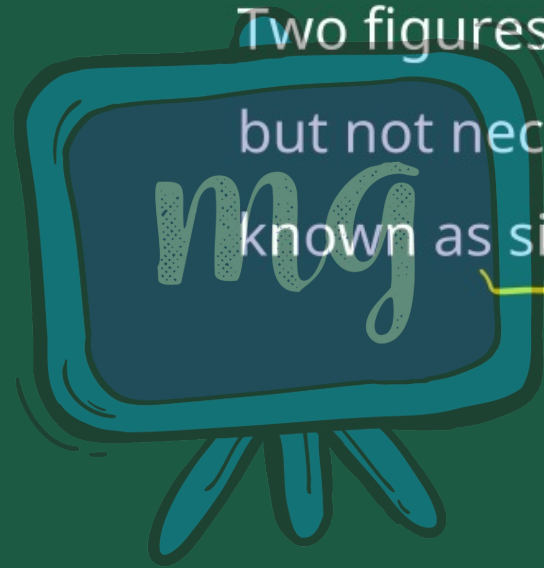
$$\Delta ABL \cong \Delta PQR$$





SIMILAR FIGURES

Two figures having the same shape
but not necessarily the same size is
known as similar.

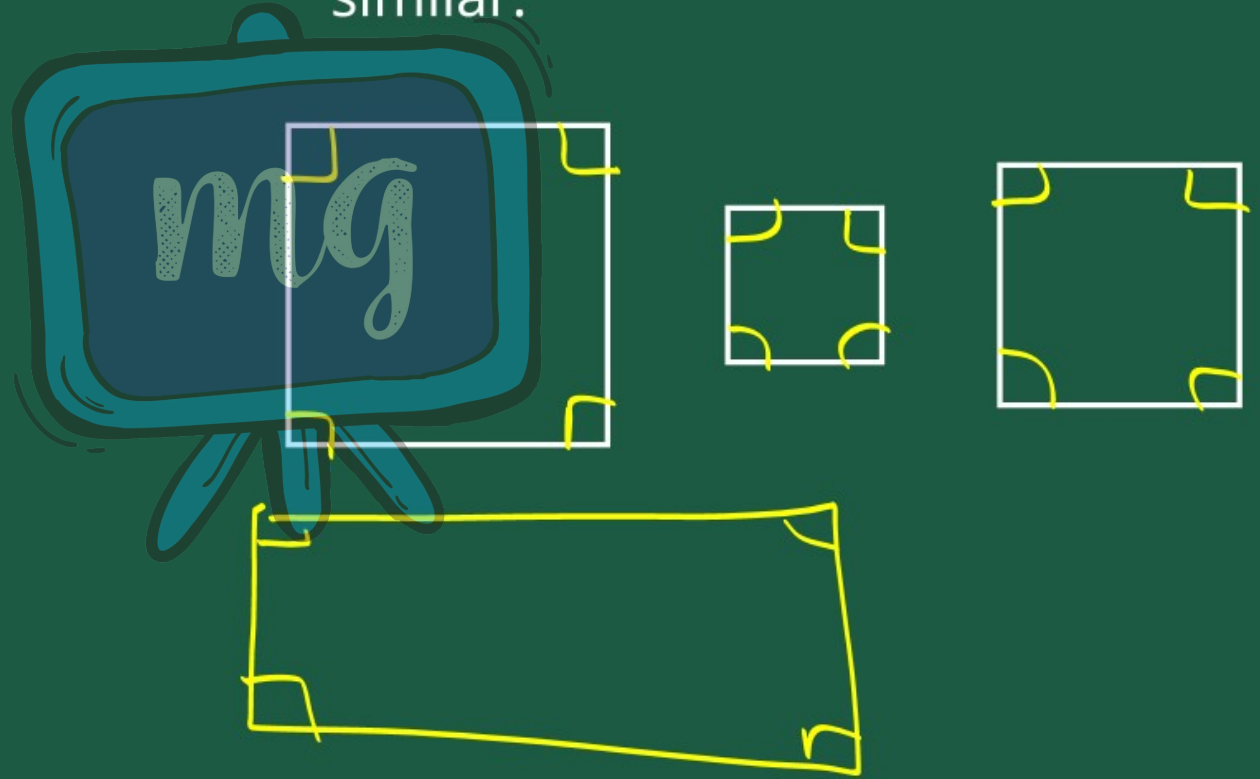


EXAMPLES OF SIMILAR FIGURES

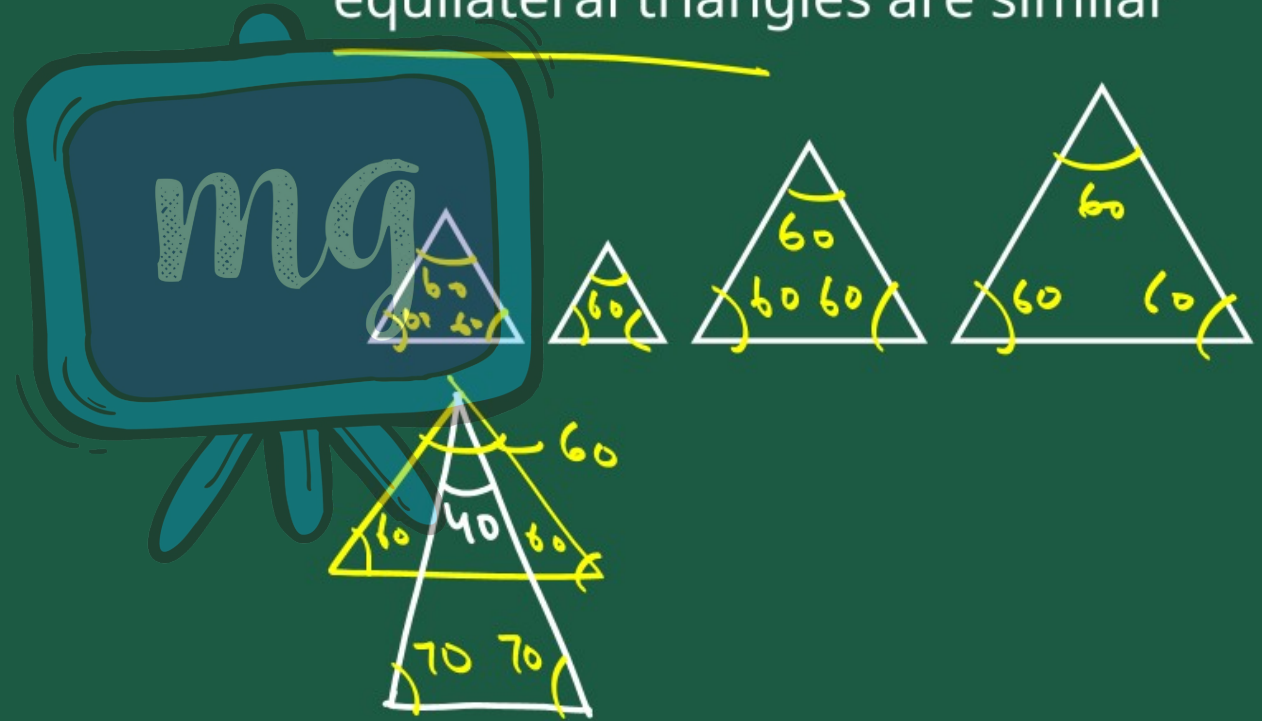
1. Any two or more circles are similar but not necessarily congruent. They are congruent if their radii are equal.



2. Any two or more squares are similar.

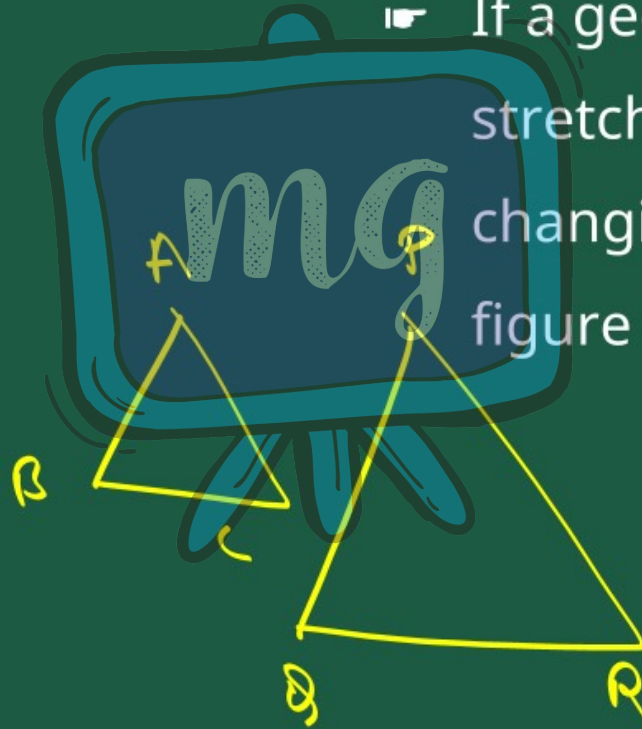


3. Any two or two or more
equilateral triangles are similar



 **Note**

▮ If a geometric figure is either stretched or shrunk, without changing its shape, we get a figure similar to it.



- All congruent figures are similar but the similar figures need not be congruent.



SIMILARITY OF POLYGONS

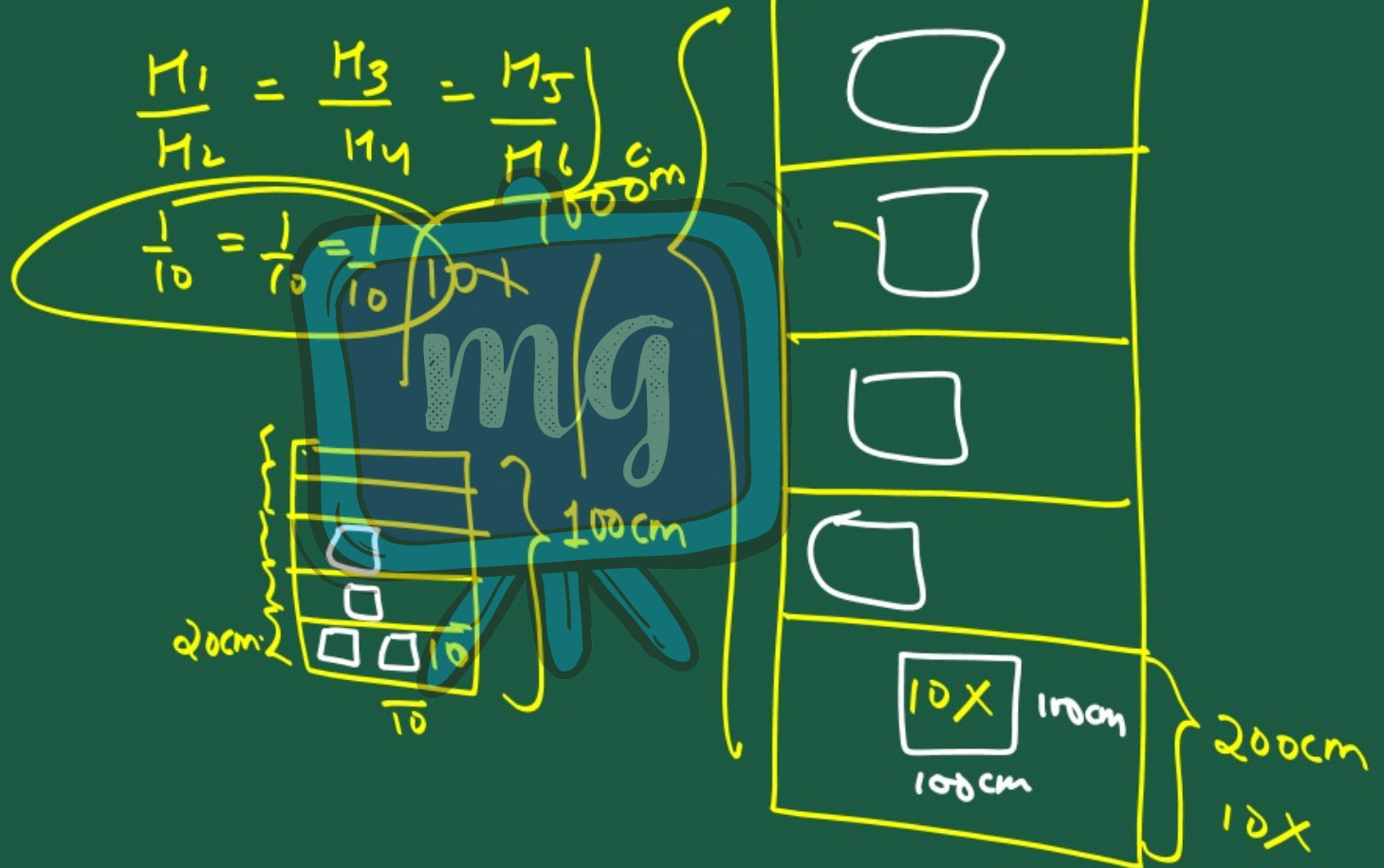
Two polygons of the same number of sides are similar, if

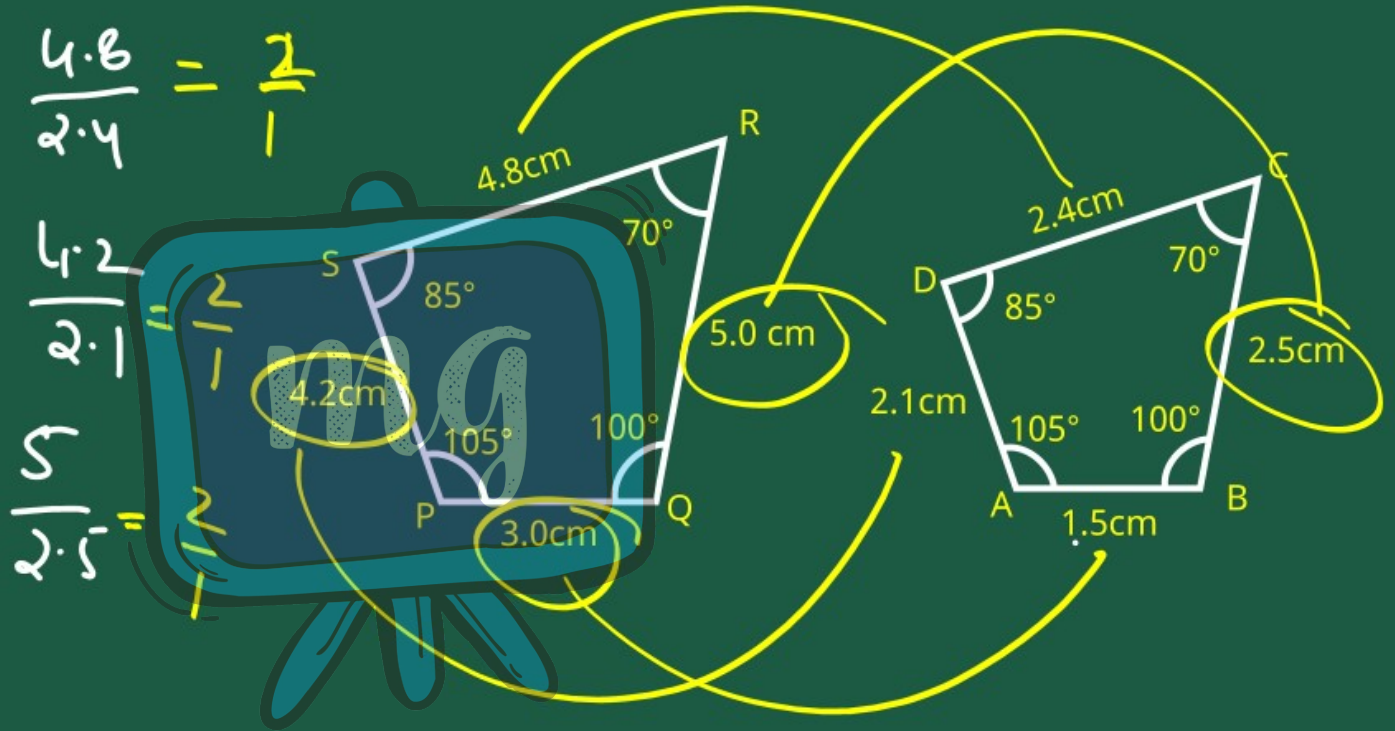
(i) their corresponding angles are equal and

(ii) their corresponding sides are in the same ratio (or proportion).



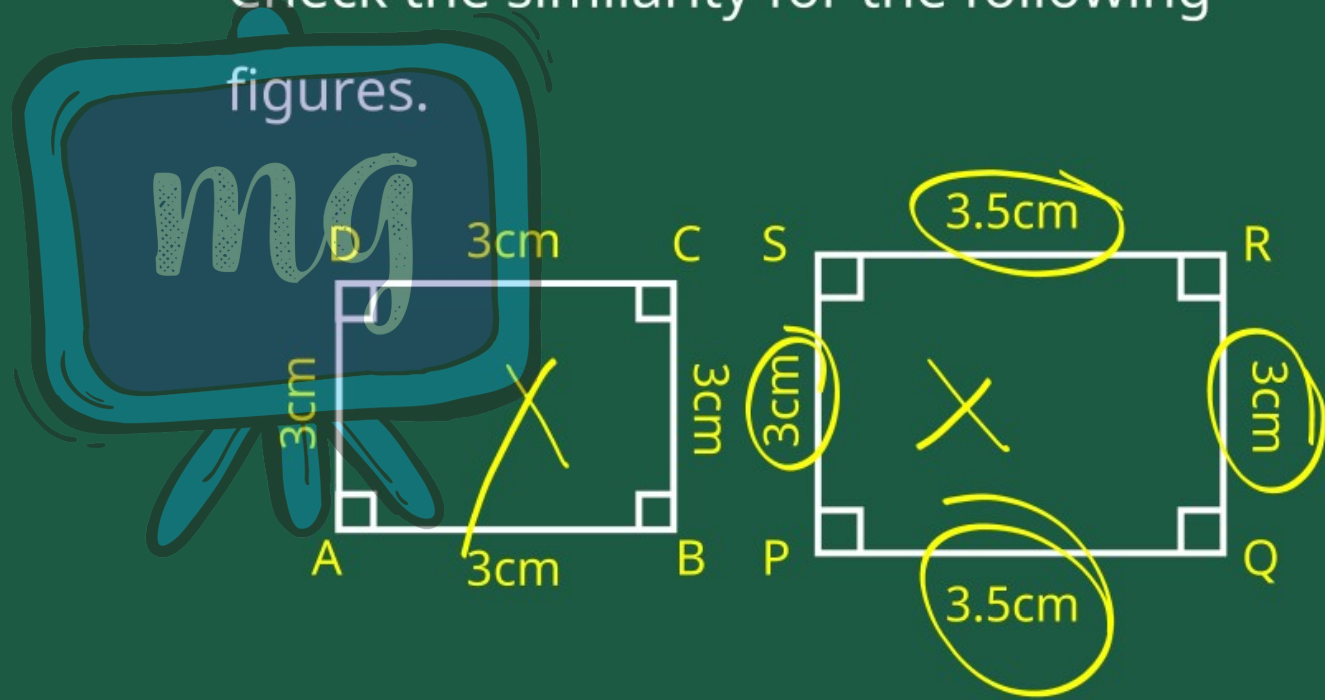
mg





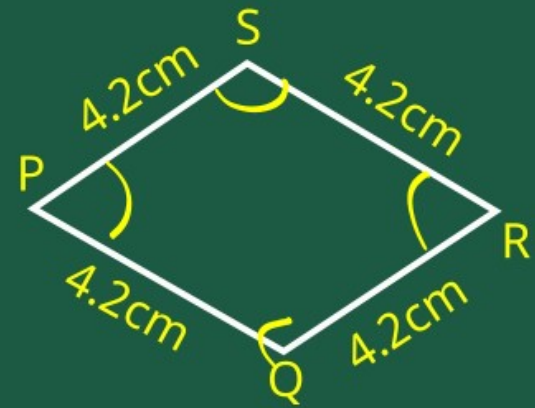
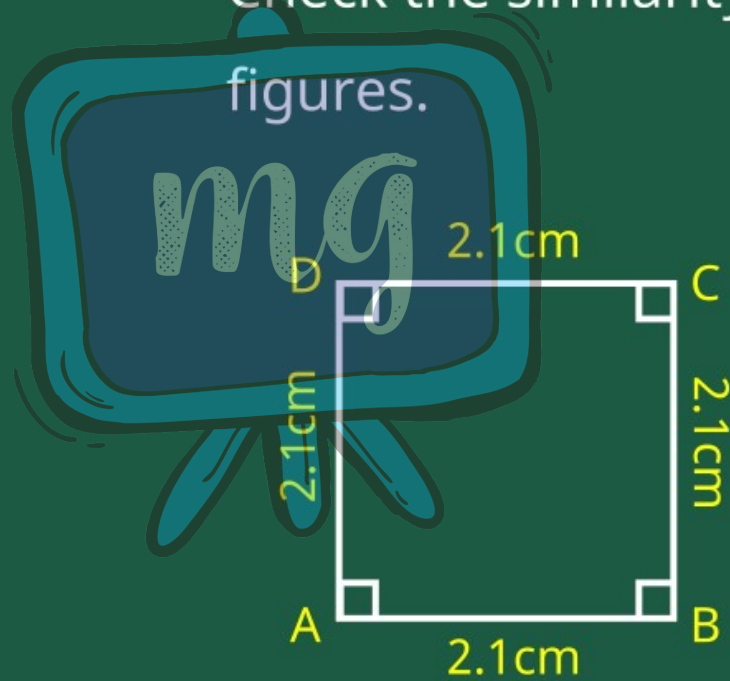
Example :

Check the similarity for the following figures.

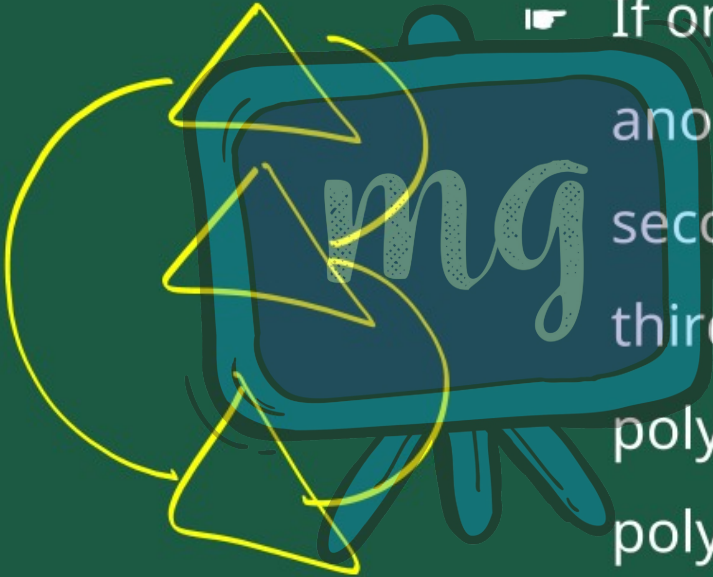


Example :

Check the similarity for the following figures.

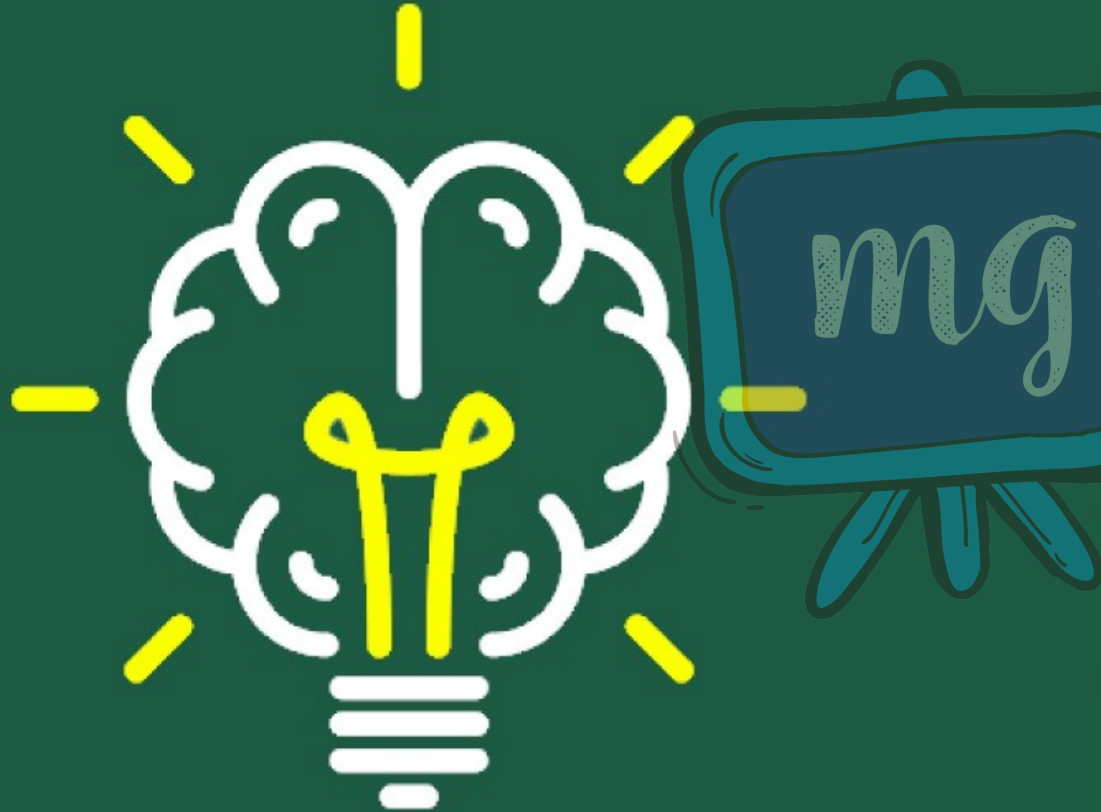


 **Note**



▮ If one polygon is similar to another polygon and this second polygon is similar to a third polygon, then the first polygon is similar to the third polygon.

LEARNING OUTCOMES



1 | Similar figures

2 | Congruent figures

3 | Similarity of Polygons

ASSESSMENT

1 | Which of the following triangles have the same side lengths?

- A Scalene
- B Isosceles
- C Equilateral
- D None of these

ASSESSMENT

2

Which of the following are not similar figures?

- A Circles
- B Squares
- C Equilateral triangles
- D Isosceles triangles

ASSESSMENT



3

All similar figures are congruent.

- A True
- B False

