

More Information About Similar Figures

In mathematics, polygons are **similar** if their corresponding angles are congruent and the ratio of their corresponding sides are in proportion.

Once we know that triangles (or any polygons) are similar, we also know some additional facts about the figures.

1. Ratio of Perimeters, Altitudes, Medians, Diagonals, and Angle Bisectors

If two polygons are **similar**, their corresponding sides, altitudes, medians, diagonals, angle bisectors and perimeters are all in the same ratio.

Example:

If the sides of two similar triangles are in the ratio 4:9, what is the ratio of their perimeters?

Answer: 4:9

2. Ratio of Areas

If two polygons are **similar**, the ratio of their **areas** is equal to the

square of the ratio of their corresponding sides.

Example:

If the sides of two similar triangles are in the ratio of 3:5, find the ratio of their areas.

Answer: 9:25

3. Ratio of Volumes

If two polygons are **similar**, the ratio of their **volumes** is equal to the **cube** of the ratio of their corresponding sides.

Example:

If the sides of two similar triangles are in the ratio of 2:3, find the ratio of their volumes.

Answer: 8:27