

Similar shapes, student

Exploring the rule of constant ratio between corresponding sides in similar shapes

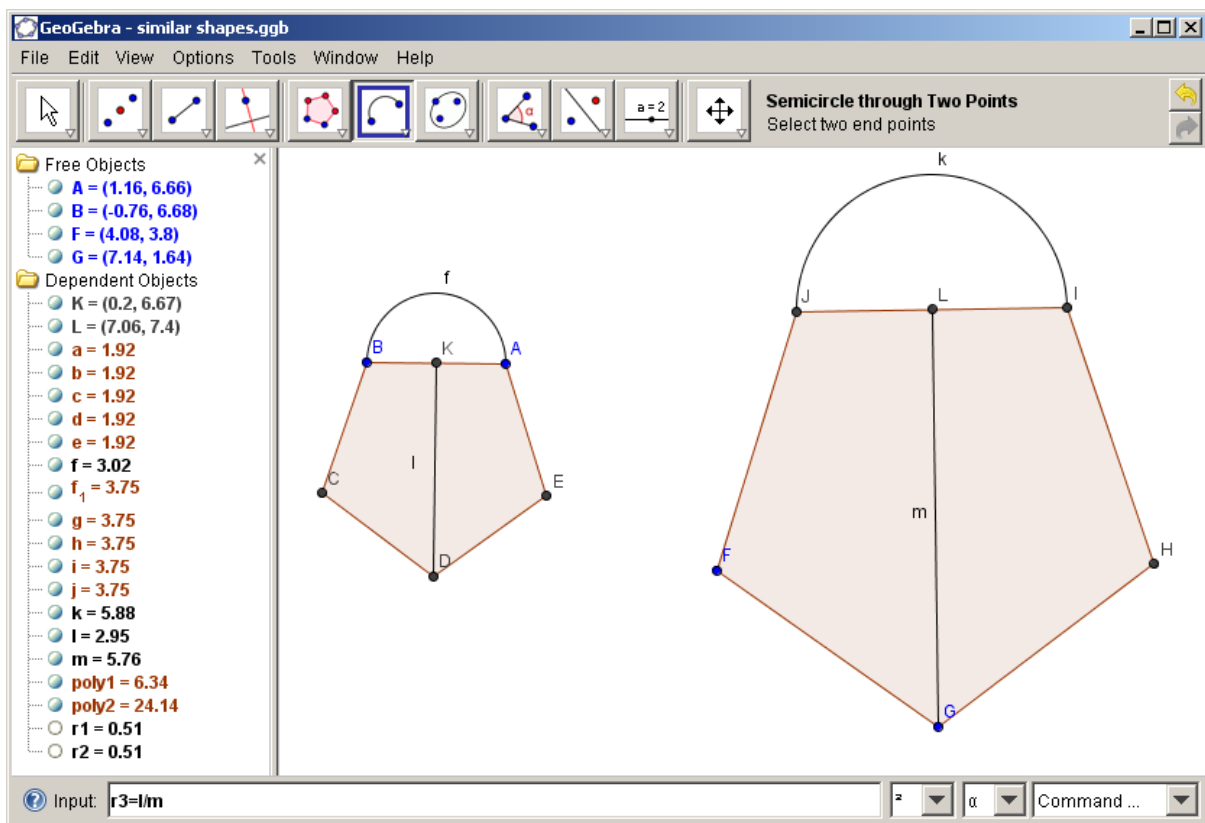
Draw two similar shapes like the ones shown below. You can think of the shape as a handbag.

Drawing the pentagons: Use the *Regular polygon* tool.

Drawing semicircles: Use the *Semicircle through Two Points* tool.

Midpoint of one side in the pentagon: Use the *Midpoint or Centre* tool.

Height of pentagon: Use the *Segment between two points* tool.



- 1) Explain why the two shapes are similar.
- 2) In the Algebra View you find the names of all sides in the pentagons and the semicircle. Calculate ratios between sides and semicircles.
- 3) Calculate ratios between height and side in both pentagons.
- 4) Change the size of one or both shapes. What happens to the ratios?
- 5) Add more distances and calculate ratios.

Calculate length

You are going to use the shape above as pattern for making a handbag. The handle you have bought has a diameter of 22 cm. How much tissue do you need to buy? Make a pattern which can be used to cut the tissue for the bag.

Calculate distance

The distance from A to B is 500m.

- 1) Find the scale of the map.
- 2) You want to paddle around Olderøya and Kalvøya. Calculate the distance.

