FILL THE GAP!

GeoGebra Action Package (GAP) for the ADVENTURES ON PAPER exercise book

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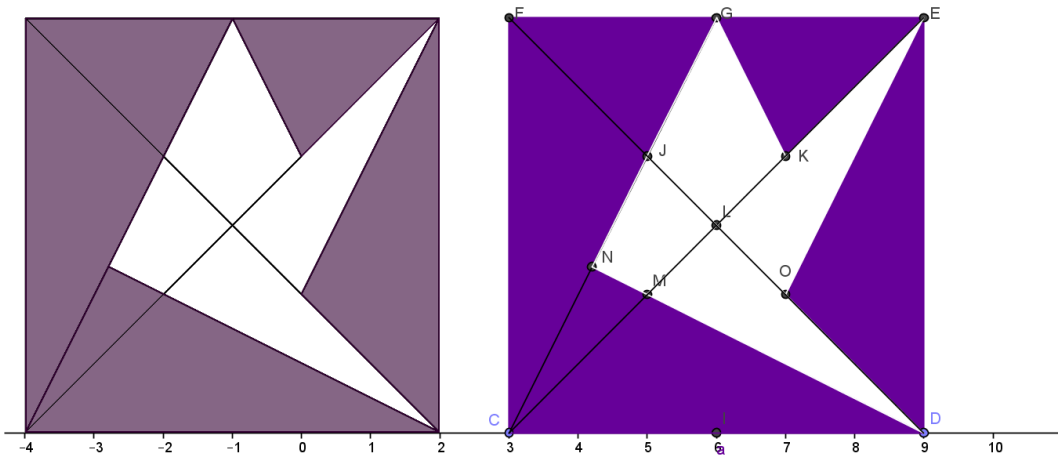
Exercise 1 (Burczyk1.ggb)

Insert the GeoGebra image in one of the forms folded from two kinds of papers (left). Construct the same shape in GeoGebra (right). Display the areas and the length of segments in Geogebra. Change the length of the square (move points C and D), note the resulting constant proportions. 14-18 years old high school students can also make the proofs.



CDEF négyzet területe: 36

GJLK négyszög területe: 3

EFL háromszög területe: 9

JLMN négyszög területe: 1.8

LMD háromszög területe: 3

$$\frac{CDEF\ négyzet\ területe}{GLJK\ négyszög\ területe} = \frac{36}{3} = 12$$

$$\frac{EFL\ háromszög\ területe}{GLJK\ négyszög\ területe} = \frac{9}{3} = 3$$

$$\frac{EFL\ háromszög\ területe}{JLMN\ négyszög\ területe} = \frac{9}{1.8} = 5$$

A négyzet átlójának hossza (EC szakasz): 8.49

EK szakasz hossza: 2.83

$$\frac{EC}{EK} = \frac{8.49}{2.83} = 3$$

$$\frac{EC}{LK} = \frac{8.49}{1.41} = 6$$

CDEF square's area: 36

GJKL square's area: 3

EFL triangle's area: 9

JMLN square's area: 1,8

LMD triangle's area: 3

$$\frac{CDEF\ square's\ area}{GLJK\ square's\ area} = \frac{36}{3} = 12$$

$$\frac{EFl\ triangle's\ area}{GLJK\ square's\ area} = \frac{9}{3} = 3$$

$$\frac{EFl\ triangle's\ area}{JMLN\ square's\ area} = \frac{9}{1,8} = 5$$

The length of the square's diagonal (EC segment): 8.49

EK segment's length: 2.83

$$\frac{EC}{EK} = \frac{8,49}{2,83} = 3$$

$$\frac{EC}{LK} = \frac{8,49}{1,41} = 6$$

Exercise 2 (Burczyk2.ggb)

The aim of this exercise is to practice symmetries. Construct a square in GeoGebra then draw the diagonals of the square, and then connect the midpoint of the sides with the opposite vertices. In this way, we divided the square into triangles and rectangles. You can simply color the triangles and rectangles if you transform them into polygons from the vertices by using the following icon:  . If a polygon is complete, the congruent polygons can be obtained by mirror reflection and rotation, using the symmetry properties of the figure. The following diagram shows an example for coloring: