



# „CONTEMPORARY APPROACH TO THE DEVELOPMENT OF SPATIAL COMPREHENSION THROUGH AUGMENTED REALITY CONTENT“

**Warsaw University  
of Technology**

## ***43. Cutting the cylinder with 5 planes***

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<https://liggd.it/spacar/en/graphic-materials>

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**SPACAR**

**No. 2019-1-LT01-KA202-060471**

**Intellectual Output:** O1: Cutting Geometrical Solids with Planes.

**Exercise number:** 43

**Title:** Cutting the cylinder with 5 planes

**Description:**

The cylinder presented below has been cut with 5 planes –  $\alpha$ ,  $\beta$ ,  $\gamma$ ,  $\delta$ ,  $\epsilon$ . Construct horizontal and profile projections (A3 size, scale 1:1), locate the position of planes yourself, give specific angles designed, use paper and pencil or /and computer software.

After drawings answer the questions below:

1. Which pairs of the planes mutually intersect within the outline of the cylinder?
2. Which pairs of the planes mutually intersect outside of the solid?
3. Is that possible that some of the planes will not mutually intersect ?
4. What types of sections correspond to each plane: circle, ellipse, rectangle?

**Given digital files:**

IO1-43-a.pdf: frontal projection of the cylinder and cutting planes

IO1-43-b.obj: 3D model of the given problem solved.

**Result:**

Frontal, horizontal and profile projections of the cylinder cut with 5 planes (A3 size, scale 1:1)

Answer to questions 1-4.

**Prior knowledge:**

Basic knowledge related to descriptive geometry, knowledge of geometrical surfaces.

**Augmented reality content:**

3D model of geometric solid cut with relevant cutting planes.



Erasmus+

## PROJECT CONSORTIUM PARTNERS:



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SNEAKYBOX

P6. SneakyBox [SBox]



P7. Jugendförderverein Parchim/Lübz e.V. [JFV PCH/LBZ e.V.]



P8. DECROLY, SL [DECROLY]