
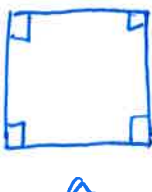


1.  $ALA_1 = \pi r^2$
 $= \pi \left(\frac{d}{2}\right)^2$

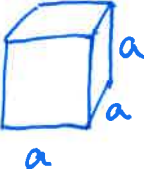
 $ALA_2 = a^2$

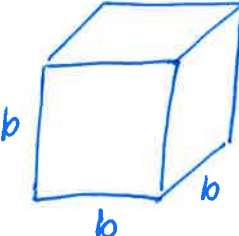
$ALA_1 = ALA_2$

$\Rightarrow a^2 = \pi \left(\frac{d}{2}\right)^2 \quad \parallel \sqrt{\quad}$

$\Rightarrow a = \underline{\underline{\sqrt{\pi} \frac{d}{2}}}$

EUKLIDINEN GEOMETRIA
 HARJOITUS 1/2018
 RATKAISUT

2.  $V_1 = a^3$

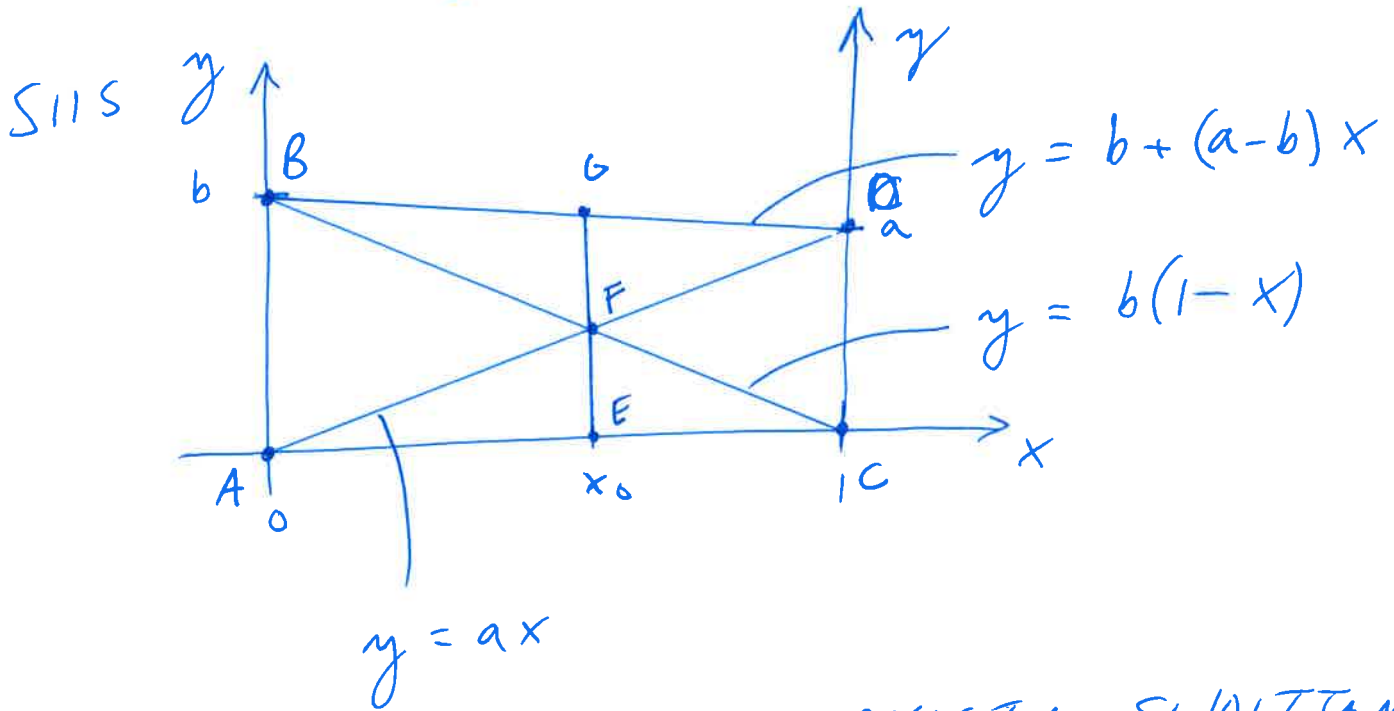
 $V_2 = b^3$

$V_2 = 2V_1$

$\Rightarrow b^3 = 2a^3 \quad \parallel \sqrt[3]{\quad}$

$\Rightarrow b = \underline{\underline{\sqrt[3]{2} a = 2^{\frac{1}{3}} a}}$

4. OLKONN $\begin{cases} A = (0, 0) \\ C = (1, 0) \\ E = (x_0, 0) \end{cases}$ JA $\begin{cases} B = (0, b) \\ D = (1, d) \end{cases}$



SUORIEN YHTÄLÖIT VOI TARKISTAA SIJOITTA MAL-
LA PISTEIDEN A, B, C, D KOORDINAATIT
NIIHIN,

SIS $F = (x_0, y_0) \Rightarrow b(1-x_0) = ax_0$

$\Rightarrow b - bx_0 = ax_0$

$\Rightarrow (a + b)x_0 = b$

$\Rightarrow x_0 = \frac{b}{a+b}$

$\Rightarrow y_0 = b(1-x_0) = b \frac{(a+b) - b}{a+b} = \frac{ab}{a+b} = \frac{1}{\frac{1}{b} + \frac{1}{a}}$

$\Rightarrow EF = \frac{1}{\frac{1}{AB} + \frac{1}{CD}}$

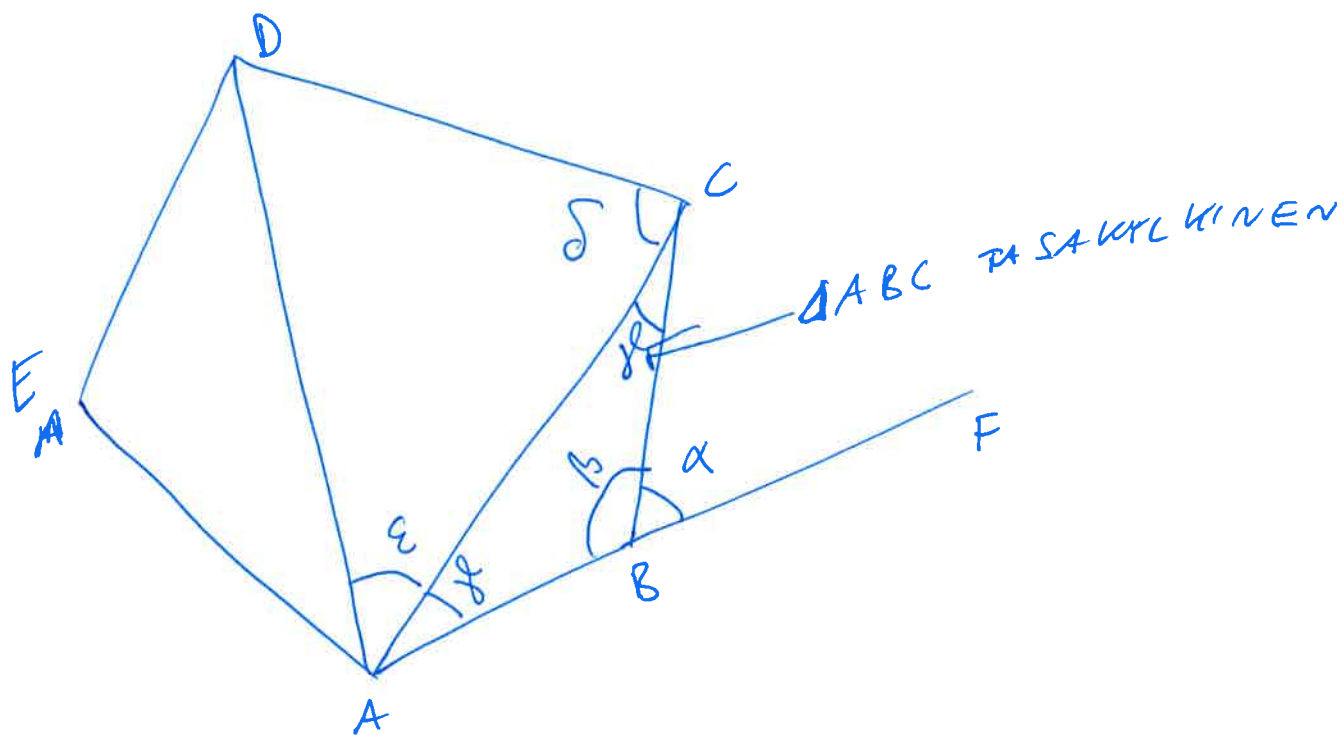
$\begin{cases} EF = R \\ AB = R_1 \\ CD = R_2 \end{cases}$

$\frac{1}{R} = \frac{1}{R_1} + \frac{1}{R_2}$

↑ VASTUKSET SARJASSA RINNAN KAAVA

OSOITA ITSE:
 $EG = 2EF$

5. SIIS ESIM.



• KOSKA 1 KIERROS KMPÄRI = 360° , NIIN

$$5\alpha = 360^\circ \Rightarrow \alpha = \frac{360^\circ}{5} = 72^\circ$$

• VIERNSKULMILLE

$$\alpha + \beta = 180^\circ$$

$$\Rightarrow \beta = 180^\circ - \alpha = \underline{108^\circ}$$

• $\triangle ABC$ TASA KYLKINEN

$$\Rightarrow 2\gamma + \beta = 180^\circ$$

$$\Rightarrow \gamma = \frac{180^\circ - \beta}{2} = \frac{72^\circ}{2} = \underline{36^\circ}$$

$$\gamma + \delta = \beta \Rightarrow \delta = \beta - \gamma = 108^\circ - 36^\circ = \underline{72^\circ}$$

• $\triangle ACD$ TASA KYLKINEN

$$\Rightarrow 2\delta + \epsilon = 180^\circ$$

$$\Rightarrow \epsilon = 180^\circ - 2\delta = 180^\circ - 144^\circ = \underline{36^\circ}$$