

BURIC
AUD-1

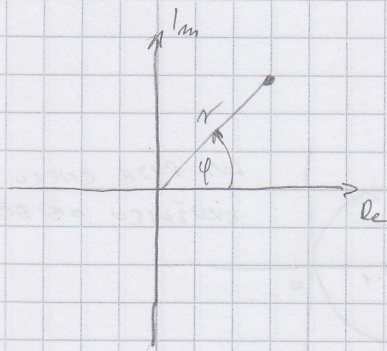


16.09.2009

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$$z = x + iy = r(\cos \varphi + i \sin \varphi) = r \cdot e^{i\varphi}$$

$$e^{iz} = \cos z + i \sin z$$



1.c) $\operatorname{Re}(1+z) = |z|$

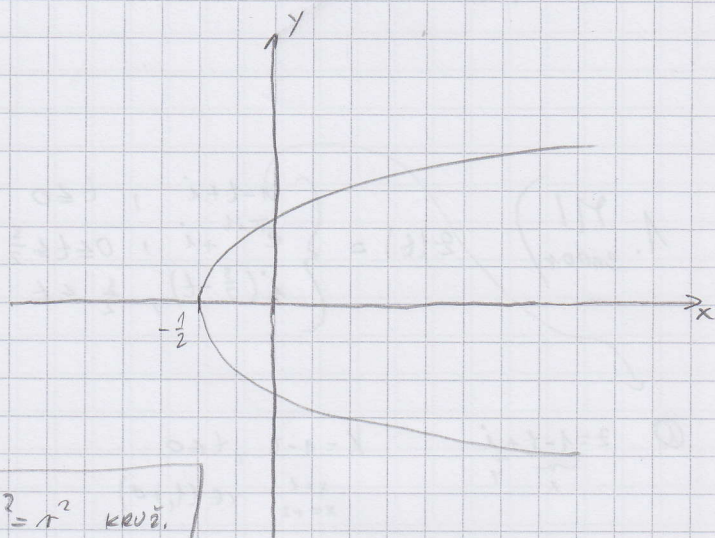
$$\operatorname{Re}(1+x+iy) = |x+iy|$$

$$1+x = \sqrt{x^2+y^2}$$

$$1+2x+x^2 = x^2+y^2$$

$$1+2x = y^2$$

$$x = \frac{1}{2}y^2 - \frac{1}{2}$$



4.b) $|z-i| - |z+i| = 1$

$$|x+i(y-1)| - |x+i(y+1)| = 1$$

$$\sqrt{x^2+(y-1)^2} - \sqrt{x^2+(y+1)^2} = 1$$

$$\sqrt{x^2+(y-1)^2} = 1 + \sqrt{x^2+(y+1)^2}$$

$$x^2 + y^2 - 2y + 1 = 1 + 2\sqrt{x^2+(y+1)^2} + x^2 + y^2 + 2y + 1$$

$$-4y - 1 = 2\sqrt{x^2+(y+1)^2} \quad \text{uvijet } -4y-1 \geq 0$$

$$16y^2 + 8y + 1 = 4x^2 + 4y^2 + 8y + 4$$

$$12y^2 - 4x^2 = 3$$

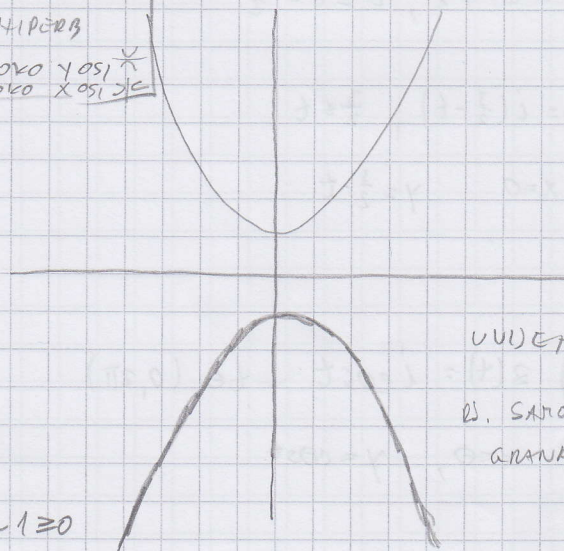
$$\frac{y^2}{\frac{3}{4}} - \frac{x^2}{3} = 1$$

$$(x-x_0)^2 + (y-y_0)^2 = r^2 \quad \text{krug}$$

$$\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1 \quad \text{ELIPSA}$$

$$\frac{x^2}{a^2} - \frac{y^2}{b^2} = 1 \quad \text{HIPERB}$$

-x → 0 y 0 y 0 x 0
-y → 0 x 0 x 0 y 0



uvijet

0. SAKO DOVA
GRANA

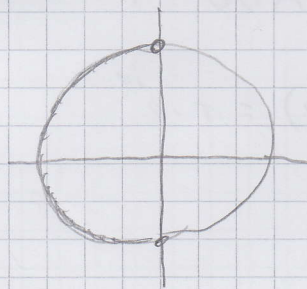
$$y \leq -\frac{1}{4}$$

PARAMETRIZACIJA

$$z(t) = x(t) + iy(t)$$

$$z(\varphi) = re^{i\varphi}$$

$$z = 2e^{i\varphi}, \varphi \in \left(\frac{\pi}{2}, \frac{3\pi}{2}\right)$$



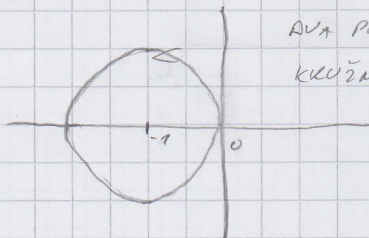
$$5.6) z(t) = e^{2it} - 1, t \in (0, 2\pi)$$

DVA PUTA CIJELU KRUŽNICU OBLIKOM

PODAK SREDIŠTA KRUŽNICE

$$|z+1| = 1$$

$$|z-2_0| = r$$



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$$|z-1+i| = 2$$

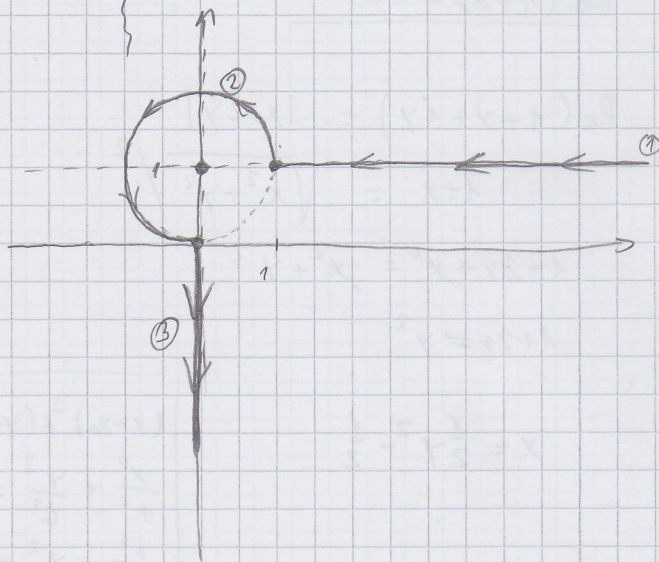
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$$z = 2e^{i\varphi} + 1 - i$$

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$$z(t) = \begin{cases} 1-t+i, & t \leq 0 \\ e^{\pi i t} + i, & 0 \leq t \leq \frac{3}{2} \\ i(\frac{3}{2}-t), & \frac{3}{2} \leq t \end{cases}$$



$$① z = 1-t+i$$

$$x = 1-t, t \leq 0$$

$$x=1$$

$$x=-2$$

$$x \in (1, +\infty)$$

$$② z = e^{\pi i t} + i, 0 \leq t \leq \frac{3}{2}$$

$$③ z = i(\frac{3}{2}-t), \frac{3}{2} \leq t$$

$$x=0$$

$$y = \frac{3}{2}-t$$

$$5.7) z(t) = i \cos t, t \in (0, 2\pi)$$

$$x=0, y = \cos t$$

