

Grupni rad
KOMPLEKSNI BROJEVI

Vođa grupe: _____

Pomoćnik vođe: _____

Članovi grupe: _____

Zajednički zadaci:

Zadani su kompleksni brojevi:

$$z_1 = 2 - i$$

$$z_2 = 3i$$

$$z_3 = -5 + 2i$$

$$z_4 = \frac{1}{2} + 4i$$

Izračunaj:

a) $z_1 + \overline{z_2} - z_3 + 5i^{105} =$

b) $\text{Im}(2z_4 + z_2^2) =$

c) $\frac{z_3}{z_1} + z_4 =$

d) $\text{Re} \frac{z_1 \cdot z_3}{(2i)^3} =$

e) $|-6iz_4 + \overline{z_3}| =$

Zadaci za vođu:

f) $\overline{z_2} - 3z_1 + iz_3 - \left(\frac{1}{i}\right)^{303} =$

g) $\text{Re}(z_1 \cdot z_3 + 4z_2) =$

h) $\frac{z_3}{z_2} + \frac{z_2}{z_3} =$

i) $\text{Im} \frac{i^{547}}{z_4^2 - z_3} =$

j) $\left| \frac{z_3^8}{z_1^9} \right| =$

Zadaci za pomoćnika:

f) $z_2 - 3\overline{z_1} + 4z_4 - 6i^{125} =$

g) $\text{Im}(z_1 \cdot z_2 - 5z_3) =$

h) $\frac{z_1}{z_2} + \frac{z_2}{z_1} =$

i) $\text{Re} \frac{z_3^2 + 4}{i^{253}} =$

j) $\left| \frac{z_4^7}{z_2^6} \right| =$

Zadaci za člana:

f) $z_2 + z_1 + \overline{z_3} - i^{26} =$

g) $\text{Im}(3z_1 - 2z_3) =$

h) $\frac{z_1}{z_2} - z_3 =$

i) $\text{Re} \frac{i^{85}}{z_1^2} =$

j) $|z_3 \cdot z_4 + 8i| =$

Zadaci za člana:

f) $z_2 + \overline{z_1} - z_3 + i^{36} =$

g) $\text{Re}(2z_1 - 3z_3) =$

h) $\frac{z_2}{z_1} + z_3 =$

i) $\text{Im} \frac{z_3^2}{i^{75}} =$

j) $|7i - z_1 \cdot z_4| =$

Rješenja:

Zajednički zadaci:

- a) $7-i$
- b) $8 \quad (-8+8i)$
- c) $-\frac{19}{10} - \frac{19}{5}i$
- d) $-\frac{9}{8} \quad \left(-\frac{9}{8} - i\right)$
- e) $\sqrt{386} \quad (19-5i)$

Zadaci za vođu:

- f) $-8-6i$
- g) $-8 \quad (-8+21i)$
- h) $\frac{76}{87} + \frac{100}{87}i$
- i) $\frac{172}{1913} \quad \left(-\frac{32}{1913} + \frac{172}{1913}i\right)$
- j) $\frac{29^4 \sqrt{5}}{5^5} \approx 506.09$

Zadaci za pomoćnika:

- f) $-4+10i$
- g) $-4 \quad (28-4i)$
- h) $\frac{14}{15} + \frac{8}{15}i$
- i) $-20 \quad (-20-25i)$
- j) $\frac{65^3 \sqrt{65}}{2 \cdot 4^3 \cdot 3^6} \approx 23.73$

Zadaci za člana:

- f) -2
- g) $-7 \quad (16-7i)$
- h) $\frac{14}{3} - \frac{8}{3}i$
- i) $-\frac{4}{25} \quad \left(-\frac{4}{25} + \frac{3}{25}i\right)$
- j) $\frac{5\sqrt{37}}{2} \quad \left(-\frac{21}{2} - 11i\right)$

Zadaci za člana:

- f) $8+2i$
- g) $19 \quad (19-8i)$
- h) $-\frac{28}{5} + \frac{16}{5}i$
- i) $21 \quad (20+21i)$
- j) $\frac{\sqrt{101}}{2} \quad \left(-5 - \frac{1}{2}i\right)$