





3.

$$\left| \frac{z}{2} \right| = x + yi = \frac{x^2 + y^2}{2} = x + yi \quad | \cdot 2$$

$$x^2 + y^2 = 2x + 4i$$

$$x^2 - 2x = -y^2 + 4i$$

Realni brojevi:  $x^2 - 2x = \dots$

Imaginarni brojevi:  $-y^2 + 4i$



4.

$$x_1 + 2x_2 + x_3 + x_4 = 5$$

$$2x_1 + 2x_2 + 2x_3 = 6$$

$$-x_1 - 2x_2 - 4x_3 = -7$$

$$-4x_1 - x_2 - 9x_3 = -14$$

$$\begin{matrix} P \\ R \\ O \\ V \\ J \\ C \\ H \\ A \end{matrix} \begin{bmatrix} 1 & 2 & 1 & 1 \\ 2 & 2 & 2 & 0 \\ -1 & -2 & -4 & 0 \\ -4 & -1 & -9 & 0 \end{bmatrix} \begin{bmatrix} 1 \\ 1 \\ 1 \\ 1 \end{bmatrix} = \begin{bmatrix} 1+2+1+1 \\ 2+2+2+0 \\ -1-2-4+0 \\ -4-1-9+0 \end{bmatrix} = \begin{bmatrix} 5 \\ 6 \\ -7 \\ -14 \end{bmatrix}$$

$$\begin{bmatrix} 1 & 2 & 1 & 1 \\ 2 & 2 & 2 & 0 \\ -1 & -2 & -4 & 0 \\ -4 & -1 & -9 & 0 \end{bmatrix} \begin{bmatrix} x_1 \\ x_2 \\ x_3 \\ x_4 \end{bmatrix} = \begin{bmatrix} 5 \\ 6 \\ -7 \\ -14 \end{bmatrix}$$

$$\begin{aligned} \frac{1}{3} - 1 &= \frac{1-3}{3} = \frac{-2}{3} \\ -\frac{2}{3} + 1 &= \frac{-2+3}{3} = \frac{1}{3} \\ -\frac{5}{3} - 3 &= \frac{-5-9}{3} = \frac{-14}{3} \\ \frac{10}{3} - 8 &= \frac{10-24}{3} = \frac{-14}{3} \end{aligned}$$

$$\begin{aligned} \frac{1}{3} + \frac{2}{3} &= \frac{3}{3} = 1 \\ -1 + 2 &= 1 \\ \frac{2}{3} + \frac{1}{3} &= \frac{3}{3} = 1 \end{aligned}$$

$$\begin{aligned} &\begin{bmatrix} 1 & 2 & 1 & 1 & | & 5 \\ 2 & 2 & 2 & 0 & | & 6 \\ -1 & -2 & -4 & 0 & | & -7 \\ -4 & -1 & -9 & 0 & | & -14 \end{bmatrix} \xrightarrow{(-2), (1), (4)} \begin{bmatrix} 1 & 2 & 1 & 1 & | & 5 \\ 0 & -2 & 0 & -2 & | & -4 \\ 0 & 0 & -3 & 1 & | & -2 \\ 0 & -5 & -9 & 0 & | & -14 \end{bmatrix} \xrightarrow{(\frac{1}{2})} \begin{bmatrix} 1 & 2 & 1 & 1 & | & 5 \\ 0 & 1 & 0 & -1 & | & 2 \\ 0 & 0 & -3 & 1 & | & -2 \\ 0 & -5 & -9 & 0 & | & -14 \end{bmatrix} \xrightarrow{(-2), (-7)} \begin{bmatrix} 1 & 0 & 1 & 1 & | & 1 \\ 0 & 1 & 0 & -1 & | & 2 \\ 0 & 0 & -3 & 1 & | & -2 \\ 0 & 0 & -5 & -3 & | & -8 \end{bmatrix} \xrightarrow{(-\frac{1}{3})} \begin{bmatrix} 1 & 0 & 1 & 1 & | & 1 \\ 0 & 1 & 0 & -1 & | & 2 \\ 0 & 0 & 1 & \frac{1}{3} & | & \frac{2}{3} \\ 0 & 0 & -5 & -3 & | & -8 \end{bmatrix} \xrightarrow{(1), (5)} \begin{bmatrix} 1 & 0 & 0 & \frac{2}{3} & | & \frac{1}{3} \\ 0 & 1 & 0 & -1 & | & 2 \\ 0 & 0 & 1 & \frac{1}{3} & | & \frac{2}{3} \\ 0 & 0 & -5 & -3 & | & -8 \end{bmatrix} \xrightarrow{(-\frac{3}{5})} \begin{bmatrix} 1 & 0 & 0 & \frac{2}{3} & | & \frac{1}{3} \\ 0 & 1 & 0 & -1 & | & 2 \\ 0 & 0 & 1 & \frac{1}{3} & | & \frac{2}{3} \\ 0 & 0 & 0 & -\frac{14}{3} & | & -\frac{14}{3} \end{bmatrix} \xrightarrow{(-\frac{3}{14})} \begin{bmatrix} 1 & 0 & 0 & \frac{2}{3} & | & \frac{1}{3} \\ 0 & 1 & 0 & -1 & | & 2 \\ 0 & 0 & 1 & \frac{1}{3} & | & \frac{2}{3} \\ 0 & 0 & 0 & 1 & | & 1 \end{bmatrix} \xrightarrow{(\frac{1}{3}), (-1), (\frac{2}{3})} \begin{bmatrix} 1 & 0 & 0 & 0 & | & 1 \\ 0 & 1 & 0 & 0 & | & 1 \\ 0 & 0 & 1 & 0 & | & 1 \\ 0 & 0 & 0 & 1 & | & 1 \end{bmatrix} \end{aligned}$$



