

Задача 1

$$7 \times \begin{bmatrix} 5 & 10 \\ 7 & 12 \\ 11.3 & 5 \\ 25 & 30 \end{bmatrix} + 2 \begin{bmatrix} 5 & 10 \\ 7 & 12 \\ 11.3 & 5 \\ 25 & 30 \end{bmatrix} =$$

$$= \begin{bmatrix} 35 & 70 \\ 49 & 84 \\ 79.1 & 35 \\ 175 & 210 \end{bmatrix} + \begin{bmatrix} 10 & 20 \\ 14 & 24 \\ 22.6 & 10 \\ 50 & 60 \end{bmatrix} =$$

$$\begin{bmatrix} 45 & 90 \\ 63 & 108 \\ 101.7 & 45 \\ 225 & 270 \end{bmatrix}$$



## Задача 2.1

стр 1

Ответ на вопрос:

- 1) Система линейная, каждое уравнение тоже линейное.

$$\begin{cases} 3x - 2y + 5z = 7 \\ 7x + 4y - 8z = 3 \\ 5x - 3y - 4z = -12 \end{cases}$$

$$\begin{cases} x = \frac{2}{3}y - \frac{5}{3}z + \frac{7}{3} \\ 7x + 4y - 8z = 3 \\ 5x - 3y - 4z = -12 \end{cases}$$

$$\begin{cases} x = \frac{2}{3}y - \frac{5}{3}z + \frac{7}{3} \\ 7\left(\frac{2}{3}y - \frac{5}{3}z + \frac{7}{3}\right) + 4y - 8z = 3 \\ 5\left(\frac{2}{3}y - \frac{5}{3}z + \frac{7}{3}\right) - 3y - 4z = -12 \end{cases}$$

$$\begin{cases} x = \frac{2}{3}y - \frac{5}{3}z + \frac{7}{3} \\ \frac{14}{3}y - \frac{35}{3}z + \frac{49}{3} + 4y - 8z = 3 \\ \frac{10}{3}y - \frac{25}{3}z + \frac{35}{3} - 3y - 4z = -12 \end{cases}$$



Задача 2.1

стр 2.

$$\begin{cases} x = \frac{2}{3}y - \frac{5}{3}z + \frac{7}{3} \\ \frac{26}{3}y - \frac{59}{3}z + \frac{49}{3} = 3 \\ \frac{1}{3}y - \frac{37}{3}z + \frac{35}{3} = -12 \end{cases}$$

$$\begin{cases} x = \frac{2}{3}y - \frac{5}{3}z + \frac{7}{3} \\ 26y - 59z + 49 = 9 \\ \frac{1}{3}y - \frac{37}{3}z = -\frac{71}{3} \end{cases}$$

$$\begin{cases} x = \frac{2}{3}y - \frac{5}{3}z + \frac{7}{3} \\ y = \frac{59}{26}z - \frac{40}{26} \\ \frac{1}{3}y - \frac{37}{3}z = -\frac{71}{3} \end{cases}$$

$$\begin{cases} x = \frac{2}{3}y - \frac{5}{3}z + \frac{7}{3} \\ y = \frac{59}{26}z - \frac{40}{26} \\ \frac{1}{3}\left(\frac{59}{26}z - \frac{40}{26}\right) - \frac{37}{3}z = -\frac{71}{3} \end{cases}$$



Задача 2.1.

стр 3.

$$\begin{cases} x = \frac{2}{3}y - \frac{5}{3}z + \frac{7}{3} \\ y = \frac{59}{26}z - \frac{40}{26} \\ -\frac{301}{26}z = -\frac{301}{13} \end{cases}$$

$$\begin{cases} x = \frac{2}{3}y - \frac{5}{3}z + \frac{7}{3} \\ y = \frac{59}{26}z - \frac{40}{26} \\ z = 2 \end{cases}$$

$$\begin{cases} x = \frac{2}{3}y - \frac{10}{3} + \frac{7}{3} \\ y = \frac{59}{13} - \frac{40}{26} \Rightarrow 3 \\ z = 2 \end{cases}$$

~~2-1=1~~

$$x = 2 - 1 \Rightarrow 1$$

$$y = 3$$

$$z = 2$$



Задача 2.2

$$\begin{cases} x^2 + yx - 9 = 0 \\ x - y/5 = 0 \end{cases}$$

$$\begin{cases} x^2 + yx - 9 = 0 \\ y = 5x \end{cases}$$

$$\begin{cases} x^2 + 5x \cdot x - 9 = 0 \\ \cancel{x = y/5} \quad y = 5x \end{cases}$$

$$\begin{cases} 6x^2 = 9 \\ y = 5x \end{cases}$$

$$\begin{cases} x = \sqrt{\frac{9}{6}} \\ y = 5\sqrt{\frac{9}{6}} \end{cases}$$

$$x = \sqrt{\frac{3}{2}}$$

$$y = 5\sqrt{\frac{3}{2}}$$



Задача 3

Плиты длиной и шириной  
комната.

$$S_{\text{плиты}} = 48 \text{ м}^2$$

$$P = 28 \text{ м}$$

$$\begin{cases} 2(a+b) = 28 \\ a \cdot b = 48 \end{cases}$$

~~задача 2~~

$$\begin{cases} a+b = 14 \\ a \cdot b = 48 \end{cases}$$

$$\begin{cases} a = 14-b \end{cases}$$

$$(14-b) \cdot b = 48$$

$$\begin{cases} a = 14-b \\ 14b - b^2 = 48 \end{cases}$$

$$b^2 - 14b + 48 = 0$$

$$D = 196 - 4 \cdot 1 \cdot 48 = 4$$

$$b_1 = \frac{14-2}{2} = 6$$

$$b_2 = \frac{14+2}{2} = 8$$