

Lineare Gleichungssysteme

$$1) \quad \begin{aligned} 6x + 3y - 1z &= 1 \\ 3x + 2y + 2z &= 0 \\ 2x + 2y + 5z &= -1 \end{aligned}$$

$$2) \quad \begin{aligned} 3x - 2y - 1z &= -1 \\ -1x + 1y &= 1 \\ 2x - 1y - 1z &= 0 \end{aligned}$$

$$3) \quad \begin{aligned} -2x + 3y + 1z &= 4 \\ 4x - 3y - 2z &= 1 \\ 1x + 1y + 3z &= 9 \end{aligned}$$

$$4) \quad \begin{aligned} 4x - 3y + 1z &= 2 \\ 2x + 1y - 2z &= 1 \\ 2x - 4y + 3z &= 3 \end{aligned}$$

$$5) \quad \begin{aligned} 1x + 3y - 2z + 1a &= 3 \\ -1x + 1y - 1z + 1a &= 5 \\ 2x + 3y + 3z + 4a &= 7 \\ -1x + 1y - 3z + 3a &= 9 \end{aligned}$$

$$6) \quad \begin{aligned} 1x + 2y + 3z + 4a &= 1 \\ 2x + 1y + 1z + 2a &= -6 \\ 3x + 2y + 1z &= -5 \\ 1y - 2z + 1a &= 0 \end{aligned}$$

$$7) \quad \begin{aligned} 1a + 1b + 1c + 1d + 1e &= 1 \\ 1a + 2b + 3c + 2d + 1e &= -1 \\ 1a + 1c + 1e &= 1 \\ 1b + 1c + 1d &= -1 \\ 3a + 1b + 5c + 1d + 3e &= 1 \end{aligned}$$

$$8) \quad \begin{aligned} 4x - 5y + 2z &= 0 \\ 2x + 4y - 3z &= 1 \\ 2x - 9y + 5z &= -1 \end{aligned}$$

$$9) \quad \begin{aligned} 6x + 4,8y - 3z &= 0 \\ 2x + 1,6y + 4z &= 10 \\ 3x + 2,4y - 1z &= 2 \end{aligned}$$

$$10) \quad \begin{aligned} 2x - 3y - 5z &= 2 \\ -1x + 2y + 3z &= -1 \\ -1x + 3y + 4z &= -1 \end{aligned}$$

$$11) \quad \begin{aligned} 2x - 3y - 5z &= 2 \\ -1x + 2y + 3z &= -1 \\ -2x + 5y + 7z &= 0 \end{aligned}$$

$$12) \quad \begin{aligned} 6x + 4,8y - 3z &= 0 \\ 2x + 1,6y + 4z &= 10 \\ 3x + 2,4y - 1z &= 1 \end{aligned}$$

$$13) \quad \begin{aligned} 4x + 2y + 1z &= 3 \\ 1x + 6y + 1z &= 4 \\ 2x + 4y + 5z &= 7 \end{aligned}$$

Zusatz: 
$$\frac{3}{y} - \frac{z}{y \cdot x} + \frac{4}{x} = \frac{5}{y \cdot x}$$

$$(x + 2)(x - 2) + (y + 3)^2 + (z + 4)^2 = (x-1)^2 + (y + 1)^2 + (z + 5)^2$$

$$8x - y + 3(z + 2) - 2(2x - y + 2) = x - y + z + 3$$

Lösungen: (-2;4;-1);(t;t+1;t-1);(3;3;1);keine Lösung;

(-2;1;0;2);(-4;3;1;-1);(s;t;-1;-t;2-s);

(t;  $\frac{16t-2}{7}$  ;  $\frac{26t-5}{7}$  );keine Lösung;(t;1-t;t-1);keine Lösung;

(t;  $\frac{5-5t}{4}$  ;2);( $\frac{13}{45}$  ;  $\frac{21}{45}$  ;  $\frac{41}{45}$  );

(-1;2;0)