

Soustava lineárních rovnic: řešení

- I. $-x + 2y + 3z - 2t = 6$
- II. $-3x - y + z - 7t = -5$
- III. $-2x + 2y - 8t = -2$
- IV. $x - y + 2z + 6t = 5$

$$\left(\begin{array}{cccc|c} -1 & 2 & 3 & -2 & 6 \\ -3 & -1 & 1 & -7 & -5 \\ -2 & 2 & 0 & -8 & -2 \\ -1 & -1 & 2 & 6 & 5 \end{array} \right) \sim \left(\begin{array}{cccc|c} -1 & 2 & 3 & -2 & 6 \\ 0 & -4 & 7 & 11 & 10 \\ 0 & 0 & 4 & 4 & 8 \\ 0 & 1 & 5 & 4 & 11 \end{array} \right) \sim \left(\begin{array}{cccc|c} -1 & 2 & 3 & -2 & 6 \\ 0 & -4 & 7 & 11 & 10 \\ 0 & 0 & 1 & 1 & 2 \\ 0 & 0 & 27 & 27 & 54 \end{array} \right) \sim$$

$$\cdot 3 = 3, -3, 6, 18 | 15$$

$$\cdot 2 = 2, -2, 4, 12 | 10$$

$$\cdot 4 = 0, 4, 20, 16 | 44$$

$$\sim \left(\begin{array}{cccc|c} -1 & 2 & 3 & -2 & 6 \\ 0 & -4 & 7 & 11 & 10 \\ 0 & 0 & 1 & 1 & 2 \\ 0 & 0 & 1 & 1 & 2 \end{array} \right) \begin{array}{l} I. \\ II. \\ III. \\ III. \end{array}$$

$$III. \quad z + t = 2$$

$$\underline{t = 2 - z}$$

$$II. \quad -4y + 7z + 11(2 - z) = 10$$

$$-4y + 7z + 22 - 11z = 10 \quad | -22$$

$$-4y - 4z = -12 \quad | :(-4)$$

$$y + z = 3$$

$$\underline{y = 3 - z}$$

$$I. \quad -x + 2(3 - z) + 3z - 2(2 - z) = 6$$

$$-x + 6 - 2z + 3z - 4 + 2z = 6$$

$$-x + 2 + 3z = 6 \quad | -2$$

$$-x = 4 - 3z$$

$$x = 3z - 4$$

ve vztahu k z:

$$\underline{\underline{\vec{r} = (3z - 4; 3 - z; z; 2 - z)}}$$

$$\vec{r} = (2 - 3t; t + 1; 2 - t; t)$$

ve vztahu k t