Soustava lineárních rovnic - řešte

I. $3x + 5y + t = 0$

II. $2x + 3y - z + 2t = 0$

III. $x + 2y + z - t = 0$

IV. $4x + 5y - 5z + 8t = 0$

$$\left(\begin{array}{cccc|c} 3 & 5 & 0 & 1 & 0 \\ 2 & 3 & -1 & 2 & 0 \\ 1 & 2 & 1 & -1 & 0 \\ 4 & 5 & -5 & 8 & 0 \end{array}\right) \sim \left(\begin{array}{cccc|c} -1 & -2 & -1 & +1 & 0 \\ 2 & 3 & -1 & 2 & 0 \\ 3 & 5 & 0 & 1 & 0 \\ 4 & 5 & -5 & 8 & 0 \end{array}\right) \sim \left(\begin{array}{cccc|c} 1 & 2 & 1 & -1 & 0 \\ 0 & -1 & -3 & 4 & 0 \\ 0 & -1 & -3 & 4 & 0 \\ 0 & -3 & -9 & 12 & 0 \end{array}\right) \sim$$

·2 = -2, -4, -2, 2 | 0

·3 = -3, -6, -3, 3 | 0

·4 = -4, -8, -4, 4 | 0

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

Mám 4 neznámé a pouze 2 rovnice ⇒ 2 volitelné (parametry)

II. $-y - 3z + 4t = 0$

$y = 4t - 3z$

I. $x + 2(4t - 3z) + z - t = 0$

$x + 8t - 6z + z - t = 0$

$x + 7t - 5z = 0$

$x = 5z - 7t$

$\vec{v} = (5z - 7t;\ 4t - 3z;\ z;\ t)$