

Lineare Gleichungssysteme Aufgabe 43

$$2x + y - 3z = 9 \quad (1)$$

$$3x + 2y - z = 24 \quad (2)$$

$$4x - 3y + 3z = 1 \quad (3)$$

$$2x + y - 3z = 9 \quad | +(-2)$$

$$3x + 2y - z = 24$$

$$4x - 3y + 3z = 1$$

$$(1) * (-2) + (2)$$

$$-4x - 2y + 6z = -18$$

$$\underline{3x + 2y - z = 24}$$

$$-x + 5z = 6 \quad (4)$$

$$(1) * 3 + (3)$$

$$6x + 3y - 9z = 27$$

$$\underline{4x - 3y + 3z = 1}$$

$$10x - 6z = 28 \quad (5)$$

$$(4) * 10 + (5)$$

$$-10x + 50z = 60$$

$$\underline{10x - 6z = 28}$$

$$44z = 88 \quad | :44$$

$$\mathbf{z = 2}$$

z in (5) eingesetzt

$$10x - 6 * 2 = 28 \quad | +12$$

$$10x = 40 \quad | :10$$

$$\mathbf{x = 4}$$

x und z in (1) eingesetzt

$$2 * 4 + y - 3 * 2 = 9$$

$$y + 2 = 9 \quad | -2$$

$$\mathbf{y = 7}$$

