

Lineare Gleichungssysteme Aufgabe 37

$$(x - 6)(y - 3) = (x - 4)(y - 4) \quad (1)$$

$$(x - 10)(y - 1) = (x - 9)(y - 3) \quad (2)$$

$$xy - 3x - 6y + 18 = xy - 4x - 4y + 16 \mid -xy$$

$$xy - x - 10y + 10 = xy - 3x - 9y + 27 \mid -xy$$

$$\begin{aligned} -3x - 6y + 18 &= -4x - 4y + 16 \mid +4x \\ -x - 10y + 10 &= -3x - 9y + 27 \mid +3x \end{aligned}$$

$$\begin{aligned} x - 6y + 18 &= -4y + 16 \mid +4y \\ 2x - 10y + 10 &= -9y + 27 \mid +9y \end{aligned}$$

$$\begin{aligned} x - 2y + 18 &= 16 \mid -18 \\ 2x - y + 10 &= 27 \mid -10 \end{aligned}$$

$$\begin{aligned} x - 2y &= -2 \mid *(-2) \\ 2x - y &= 17 \end{aligned}$$

$$\begin{array}{r} -2x + 4y = 4 \\ 2x - y = 17 \\ \hline 3y = 21 \mid :3 \end{array}$$

$$\mathbf{y = 7}$$

y in (1) eingesetzt

$$(x - 6)(7 - 3) = (x - 4)(7 - 4)$$

$$(x - 6)4 = (x - 4)3$$

$$4x - 24 = 3x - 12 \mid -3x$$

$$x - 24 = -12 \mid +24$$

$$\mathbf{x = 12}$$