

Soustavy rovnic (sčítací metoda) – snadné úlohy

1. Řeš soustavu rovnic: $5x - y = 34$
 $2x + y = 15$

Řešení:

$$5x - y = 34$$

$$2x + y = 15$$

$$7x = 49$$

$$x = 7$$

$$5x - y = 34 \quad / \cdot 2$$

$$2x + y = 15 \quad / \cdot (-5)$$

$$10x - 2y = 68$$

$$-10x - 5y = -75$$

$$-7y = -7$$

$$y = 1$$

$$\text{Zkouška: } L_1(7;1) = 35 - 1 = 34 = P_1(7;1)$$

$$L_2(7;1) = 14 + 1 = 15 = P_2(7;1)$$

$$\underline{\underline{K = \{[7;1]\}}}$$

2. Řeš soustavu rovnic: $3x - 2y = 0$
 $3x + 2y = 12$

Řešení:

$$3x - 2y = 0$$

$$3x + 2y = 12$$

$$6x = 12$$

$$x = 2$$

$$3x - 2y = 0 \quad / \cdot -1$$

$$3x + 2y = 12$$

$$4y = 12$$

$$y = 3$$

$$\text{Zkouška: } L_1(2;3) = 6 - 6 = 0 = P_1(2;3)$$

$$L_2(2;3) = 6 + 6 = 12 = P_2(2;3)$$

$$\underline{\underline{K = \{[2;3]\}}}$$

3. Řeš soustavu rovnic: $4x - y = 5$
 $5x + 2y = 3$

Řešení:

$$4x - y = 5 \quad / \cdot 2$$

$$\underline{5x + 2y = 3}$$

$$13x = 13$$

$$x = 1$$

$$4x - y = 5 \quad / \cdot 5$$

$$\underline{5x + 2y = 3} \quad / \cdot (-4)$$

$$-13y = 13$$

$$y = -1$$

$$\text{Zkouška: } L_1(1;-1) = 4 - (-1) = 5 = P_1(1;-1)$$

$$L_2(1;-1) = 5 + (-2) = 3 = P_2(1;-1)$$

$$\underline{\underline{K = \{[1;-1]\}}}$$

4. Řeš soustavu rovnic: $7x - 3y = 42$
 $6x + 3y = 36$

Řešení:

$$7x - 3y = 42$$

$$\underline{6x + 3y = 36}$$

$$13x = 78$$

$$x = 6$$

$$7x - 3y = 42 \quad / \cdot (-6)$$

$$\underline{6x + 3y = 36} \quad / \cdot 7$$

$$39y = 0$$

$$y = 0$$

$$\text{Zkouška: } L_1(6;0) = 42 - 0 = 42 = P_1(6;0)$$

$$L_2(6;0) = 36 + 0 = 36 = P_2(6;0)$$

$$\underline{\underline{K = \{[6;0]\}}}$$

5. Řeš soustavu rovnic: $3x - 11y = -5$
 $9x + 22y = 40$

Řešení:

$$3x - 11y = -5 \quad / \cdot 2$$

$$9x + 22y = 40$$

$$15x = 30$$

$$x = 2$$

$$3x - 11y = -5 \quad / \cdot (-3)$$

$$9x + 22y = 40$$

$$55y = 55$$

$$y = 1$$

$$\text{Zkouška: } L_1(2;1) = 6 - 11 = -5 = P_1(2;1)$$

$$L_2(2;1) = 18 + 22 = 40 = P_2(2;1)$$

$$\underline{\underline{K = \{[2;1]\}}}$$

6. Řeš soustavu rovnic: $5x - 3y = 6$
 $15x + 3y = 174$

Řešení:

$$5x - 3y = 6$$

$$15x + 3y = 174$$

$$20x = 180$$

$$x = 9$$

$$5x - 3y = 6 \quad / \cdot (-3)$$

$$15x + 3y = 174$$

$$12y = 156$$

$$y = 13$$

$$\text{Zkouška: } L_1(9;13) = 45 - 39 = 6 = P_1(9;13)$$

$$L_2(9;13) = 135 + 39 = 174 = P_2(9;13)$$

$$\underline{\underline{K = \{[9;13]\}}}$$

7. Řeš soustavu rovnic:

$$\begin{aligned} 11x + 4y &= 157 \\ 6x + 6y &= 120 \end{aligned}$$

Řešení:

$$11x + 4y = 157 \quad / \cdot 3$$

$$\underline{6x + 6y = 120} \quad / \cdot (-2)$$

$$21x = 231$$

$$x = 11$$

$$11x + 4y = 157 \quad / \cdot 6$$

$$\underline{6x + 6y = 120} \quad / \cdot (-11)$$

$$-42y = -378$$

$$y = 9$$

$$\text{Zkouška: } L_1(11;9) = 121 + 36 = 157 = P_1(11;9)$$

$$L_2(11;9) = 66 + 54 = 120 = P_2(11;9)$$

$$\underline{\underline{K = \{[11;9]\}}}$$

8. Řeš soustavu rovnic:

$$\begin{aligned} 9x - 11y &= 49 \\ 13x - 12y &= 63 \end{aligned}$$

Řešení:

$$9x - 11y = 49 \quad / \cdot 12$$

$$\underline{13x - 12y = 63} \quad / \cdot (-11)$$

$$-35x = -105$$

$$x = 3$$

$$9x - 11y = 49 \quad / \cdot 13$$

$$\underline{13x - 12y = 63} \quad / \cdot (-9)$$

$$-35y = 70$$

$$y = -2$$

$$\text{Zkouška: } L_1(3; -2) = 27 - (-22) = 49 = P_1(3; -2)$$

$$L_2(3; -2) = 39 - (-24) = 63 = P_2(3; -2)$$

$$\underline{\underline{K = \{[3; -2]\}}}$$

9. Řeš soustavu rovnic:

$$\begin{array}{l} 5x + 7y = 23 \\ 9x - 4y = -25 \end{array}$$

Řešení:

$$5x + 7y = 23 \quad / \cdot 4$$

$$9x - 4y = -25 \quad / \cdot 7$$

$$83x = -83$$

$$x = -1$$

$$5x + 7y = 23 \quad / \cdot 9$$

$$9x - 4y = -25 \quad / \cdot (-5)$$

$$83y = 332$$

$$y = 4$$

$$\text{Zkouška: } L_1(-1; 4) = -5 + 28 = 23 = P_1(-1; 4)$$

$$L_2(-1; 4) = -9 - 16 = -25 = P_2(-1; 4)$$

$$\underline{\underline{K = \{[-1; 4]\}}}$$

10. Řeš soustavu rovnic:

$$\begin{array}{l} 16x - 11y = 21 \\ 23x + 17y = 63 \end{array}$$

Řešení:

$$16x - 11y = 21 \quad / \cdot 17$$

$$\underline{23x + 17y = 63} \quad / \cdot 11$$

$$525x = 1050$$

$$x = 2$$

$$16x - 11y = 21 \quad / \cdot 23$$

$$\underline{23x + 17y = 63} \quad / \cdot (-16)$$

$$-525y = -525$$

$$y = 1$$

$$\text{Zkouška: } L_1(2;1) = 32 - 11 = 21 = P_1(2;1)$$

$$L_2(2;1) = 46 + 17 = 63 = P_2(2;1)$$

$$\underline{\underline{K = \{[2;1]\}}}$$