

# SISTEM LINEARNIH ENAČB Z DVEMA NEZNANKAMA



$$1. \begin{cases} 3x + 4y = -1 \\ x - 2y = -7 \end{cases} \quad / \cdot (-3)$$

$$\begin{array}{r} 3x + 4y = -1 \\ -3x + 6y = 21 \end{array} \quad \downarrow +$$

$$\begin{array}{r} 10y = 20 \\ y = 2 \end{array} \quad / : 10$$

VSTAVIŠ

$$\begin{array}{r} 3x + 4y = -1 \\ 3x + 4 \cdot 2 = -1 \\ 3x = -9 \quad / : 3 \\ x = -3 \end{array}$$

$$2. \begin{cases} 7x + y - 26 = 0 \\ -2x - 5y = 2 \end{cases}$$

$$\begin{array}{r} 7x + y = 26 \quad / \cdot 5 \\ -2x - 5y = 2 \end{array}$$

$$\begin{array}{r} 35x + 5y = 130 \\ -2x - 5y = 2 \end{array} \quad \downarrow +$$

$$\begin{array}{r} 33x = 132 \\ x = 4 \end{array} \quad / : 33$$

$$\begin{array}{r} 7 \cdot 4 + y - 26 = 0 \\ 28 + y - 26 = 0 \\ y = -2 \end{array}$$

$$3. \begin{cases} 2x + 5y = 8 \\ 4x + 3y = 16 \end{cases} \quad / \cdot (-2)$$

$$\begin{array}{r} -4x - 10y = -16 \\ 4x + 3y = 16 \end{array} \quad \downarrow +$$

$$\begin{array}{r} -7y = 0 \\ y = 0 \end{array} \quad / : (-7)$$

$$\begin{array}{r} 2x + 5 \cdot 0 = 8 \\ 2x = 8 \quad / : 2 \\ x = 4 \end{array}$$

$$4. \begin{array}{l} 3x + 5y = 13 \quad / \cdot (-5) \\ 5x + 3y = 11 \quad / \cdot 3 \end{array}$$

$$\begin{array}{l} -15x - 25y = -65 \\ 15x + 9y = 33 \end{array} \quad \left. \begin{array}{l} \\ \end{array} \right) +$$

$$\begin{array}{l} -16y = -32 \quad / : (-16) \\ \underline{\underline{y = -2}} \end{array}$$

$$\begin{array}{l} 3x + 5 \cdot 2 = 13 \\ 3x = 3 \quad / : 3 \\ \underline{\underline{x = 1}} \end{array}$$

$$5. \begin{array}{l} 6x + 5y = 14 \\ 9x - 7y + 37 = 0 \end{array}$$

$$\begin{array}{l} 6x + 5y = 14 \quad / \cdot 3 \\ 9x - 7y = -37 \quad / \cdot (-2) \end{array}$$

$$\begin{array}{l} 18x + 15y = 42 \\ -18x + 14y = 74 \end{array} \quad \left. \begin{array}{l} \\ \end{array} \right) +$$

$$\begin{array}{l} 29y = 116 \quad / : 29 \\ \underline{\underline{y = 4}} \end{array}$$

$$\begin{array}{l} 6x + 5 \cdot 4 = 14 \\ 6x = -6 \\ \underline{\underline{x = -1}} \end{array}$$

$$6. \begin{array}{l} 12x - 5y = 3 \quad / \cdot (-3) \\ 18x + 7y = 4 \quad / \cdot 2 \end{array}$$

$$\begin{array}{l} -36x + 15y = -9 \\ 36x + 14y = 8 \end{array}$$

$$\begin{array}{l} 29y = -1 \quad / : 29 \\ \underline{\underline{y = -\frac{1}{29}}} \end{array}$$

$$\begin{array}{l} 12x - 5 \cdot \left(-\frac{1}{29}\right) = 3 \\ 12x + \frac{5}{29} = 3 \\ 12x = 3 - \frac{5}{29} \\ 12x = \frac{82}{29} \quad / : 12 \\ \underline{\underline{x = \frac{41}{174}}} \end{array}$$

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$$7. \quad y = \frac{2}{5}x - 1 \quad / \cdot 5$$

$$\frac{y}{2} - \frac{x}{3} = 1 \quad / \cdot 6$$

majprej se ravnajš ulomkov in enačbi vrediš

$$\begin{array}{r} 5y = 2x - 5 \\ 3y - 2x = 6 \end{array}$$

$$\begin{array}{r} -2x + 5y = -5 \\ -2x + 3y = 6 \end{array} \quad +$$

$$\begin{array}{r} 8y = 1 \quad / : 8 \\ y = \frac{1}{8} \end{array}$$

$$\begin{array}{r} 5 \cdot \frac{1}{8} = 2x - 5 \\ \frac{5}{8} + 5 = 2x \\ \frac{45}{8} = 2x \quad / : 2 \\ x = \frac{45}{16} \end{array}$$

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8. Dani sta dve števili. Če od trikratnika prvega števila odštejemo drugo število, dobimo 7. Če pa trikratniku prvega števila prištejemo drugo število, dobimo 29. Poišči števili.

$x$  - prvo število  
 $y$  - drugo število

$$\begin{array}{r} 3x - y = 7 \\ 3x + y = 29 \end{array} \quad +$$

$$\begin{array}{r} 6x = 36 \quad / : 6 \\ x = 6 \end{array}$$

$$\begin{array}{r} 3 \cdot 6 + y = 29 \\ 18 + y = 29 \\ y = 11 \end{array}$$

9. Kva jasi sredi gozda so srne in ptiči. Koliko je enih in koliko je drugih, če smo našli 32 glav in 76 nog?

srne :  $x$     4 noge  
ptiči :  $y$     2 nogi

32 GLAV: vseh skupaj je 32

$$\begin{array}{r} x + y = 32 \quad / \cdot (-4) \\ 4x + 2y = 76 \end{array}$$

$$\begin{array}{r} x + 26 = 32 \\ x = 32 - 26 \\ x = 6 \end{array}$$

(ker imajo srne 4 noge in ptiči 2

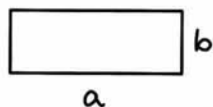
$$\begin{array}{r} -4x - 4y = -128 \\ 4x + 2y = 76 \end{array}$$

$$\begin{array}{r} -2y = -52 \quad / : (-2) \\ y = 26 \end{array}$$

kva jasi je 6 srn in 26 ptičev.

10. Obseg pravokotnika meri 38 cm. Koliko merita njegovi stranici, če je dolžina 5 cm daljša od širine?

a - dolžina  
b - širina



$$a = b + 5$$
$$\sigma = 38 \text{ cm}$$

$$\sigma = 2a + 2b$$

$$38 = 2(b + 5) + 2b$$

$$38 = 2b + 10 + 2b$$

$$28 = 4b$$

$$\underline{\underline{b = 7 \text{ cm}}}$$

$$a = b + 5 = 7 + 5 = \underline{\underline{12 \text{ cm}}}$$

Še več rešenih primerov najdeš v knjigi

Rešene matematične naloge za 9. razred

