

$$8(10 - x) = 5(x + 3)$$

$$5(3x - 7) - 4(2x - 3) = 3(4x + 9)$$

$$3(x - 1) = 2(x + 5) - 8$$

$$2(2x + 1) = 3(x + 4)$$

## Lineární rovnice - se závorkami

$$6(x + 12) = 5(21 + x)$$

- musím upravit L i P  
→ odstraním závorky

$$6x + 72 = 105 + 5x \quad | -72; -5x$$

$$6x - 5x = 105 - 72$$

$$\underline{\underline{x = 33}}$$

$$5x + 3(x - 1) = 6x + 11$$

$$\underline{5x + 3x - 3} = 6x + 11$$

$$8x - 3 = 6x + 11 \quad | +3 ; -6x$$

$$8x - 6x = 11 + 3$$

$$2x = 14 \quad | :2$$

$$\underline{\underline{x = 7}}$$

$$\underline{3(x - 2) - 2x = 0}$$

$$3x - 6 - 2x = 0 \quad |+6$$

$$3x - 2x = 0 + 6$$

$$\cancel{x} \quad 1x = 6$$

$$\underline{\underline{x = 6}}$$

$$\underline{2(1 - 3y) + 5y = 8}$$

$$2 - 6y + 5y = 8 \quad |-2$$

$$-y = 6$$

$$\underline{\underline{y = -6}}$$

$$6x - \cancel{4}(3x + 2) = x - 8$$

$$6x - 3x - 2 = x - 8$$

$$\textcircled{3x} - 2 = x - 8 \quad /+2; \textcircled{-x}$$

$$\textcircled{2x} = \textcircled{-6} \quad /:2$$

$$\underline{\underline{x = -3}}$$

$$y - \cancel{6}(7 - 3y) = 10 - 7y$$

$$y - 42 + 18y = 10 - 7y$$

$$19y - 42 = 10 - 7y \quad /+42; +7y$$

$$19y + 7y = 10 + 42$$

$$26y = 52 \quad /:26$$

$$\underline{\underline{y = 2}}$$

$$\begin{aligned}3(7x - 4) + 2(2x - 2) &= 4 \\21x - 12 + 4x - 4 &= 4 \\25x - 16 &= 4 \quad /+16 \\25x &= 20 \quad /:5 \\5x &= 4 \quad /:5 \\x &= \frac{4}{5}\end{aligned}$$

$$\begin{aligned}5x - 11 &= 6x - 3(x - 1) \\5x - 11 &= 6x - 3x + 3 \\5x - 11 &= 3x + 3 \quad /+11; -3x \\2x &= 14 \quad /:2 \\x &= 7\end{aligned}$$

$$8(3x - 2) = 15(4 - 2x) - 7(x + 2) + 30x$$

$$24x - 16 = 60 - 30x - 7x - 14 + 30x$$

$$24x - 16 = 46 - 7x \quad / + 16; + 7x$$

$$24x + 7x = 46 + 16$$

$$31x = 62 \quad / :31$$

$$\underline{\underline{x = 2}}$$

$$8x + 12 = 3x - 3 \quad / -12; -3x$$

$$8x - 3x = -3 - 12$$

$$5x = -15 \quad /:5$$

$$x = -3$$

$$3y - 5 = -2y + 5 \quad / +5; +2y$$

$$3y + 2y = 5 + 5$$

$$5y = 10 \quad /:5$$

$$y = 2$$

$$8(10 - m) = 5(m + 3)$$

$$80 - 8m = 5m + 15 \quad / -80; -5m$$

$$-8m - 5m = 15 - 80$$

$$-13m = -65$$

$$13m = 65 \quad / :13$$

$$m = 5$$

$$5(12 - 3x) + 7x = 8(3x - 2) - 13x$$

$$10 - 3a = a - 2 \quad /-10; -a$$

$$-3a - a = -2 - 10$$

$$-4a = -12$$

$$4a = 12 \quad /:4$$

$$a = 3$$

$$8(10 - m) = 5(m + 3)$$

$$5(12 - 3x) + 7x = 8(3x - 2) - 13x$$

$$5(x + 3) = 8(10 - x)$$

$$5(3x - 7) - 3(4x + 9) = 4(2x - 3)$$

$$3(x - 1) + 2(x + 2) = 3(x + 1)$$

$$3x - 2(x + 1) = 5(2x - 3) + 2$$

$$3x + 9 = 0$$

$$3x = -9$$

$$\underline{\underline{x = -3}}$$

$$2x - 13 + x = 2 \quad | + 13$$

$$3x = 15 \quad | : 3$$

$$\underline{\underline{x = 5}}$$

$$x - 14 = 7x + 10 \quad | + 14, -7x$$

$$-6x = 24$$

$$6x = -24 \quad | : 6$$

$$\underline{\underline{x = -4}}$$

$$3x + 5 + x = 9 + 2x$$

$$4x + 5 = 9 + 2x \quad | -5, -2x$$

$$2x = 4 \quad | : 2$$

$$\underline{\underline{x = 2}}$$

$$\underline{2(a+3)} - \underline{3(a+3)} = \underline{-4(a+3)}$$

$$\underline{2a+6} - \underline{3a-9} = \underline{-4a-12}$$

$$-a - 3 = -4a - 12 \quad | +3; +4a$$

$$-a + 4a = -12 + 3$$

$$\begin{aligned} 3a &= -9 && | : 3 \\ \underline{a} &= \underline{-3} \end{aligned}$$

$$\underline{10y} - \underline{5(4y+3)} = \underline{3y} - \underline{2(7y-2)}$$

$$\begin{aligned} 10y - 20y - 15 &= 3y - 14y + 4 && | +15, +11y \\ -10y - 15 &= -11y + 4 && | +15, +11y \end{aligned}$$

$$-10y + 11y = 4 + 15$$

$$\underline{\cancel{y}} = \underline{\cancel{19}}$$

$$5(x + 3) = 8(10 - x)$$
$$5x + 15 = 80 - 8x \quad /+8x$$
$$5x + 8x = 80 - 15 \quad /-15$$

$$13x = 65 \quad /:13$$
$$\underline{x = 5} \quad \underline{65:13=}$$

$$5(3x - 7) - 3(4x + 9) = 4(2x - 3)$$

$$15x - 35 - 12x - 24 = 8x - 12$$
$$3x - 62 \quad = 8x - 12 \quad /-8x; +62$$
$$-5x \quad = 50 \quad /:(-5)$$
$$\underline{\underline{x = -10}}$$

$$\begin{aligned}
 3(x - 1) + 6 &= 2(x + 5) - 2 \\
 3x - 3 + 6 &= 2x + 10 - 2 \\
 3x + 3 &= 2x + 8 \quad / -3; -2x \\
 3x - 2x &= 8 - 3 \\
 \underline{x} &= 5
 \end{aligned}$$



$$\begin{aligned}
 8(3x - 5) - 5(2x - 8) &= 20 + 4x \\
 24x - \cancel{40} - 10x + \cancel{40} &= 20 + 4x \\
 14x &= 20 + 4x \quad / -4x \\
 14x - 4x &= 20 \\
 10x &= 20 \quad /:10 \\
 \underline{x} &= 2
 \end{aligned}$$

$$\begin{aligned}2(x - 1) - 5 &= 3(3 + x) + x \\2x - 2 - 5 &= 9 + 3x + x \\2x - 7 &= 9 + 4x \\-2x &= 16 \\x &= -8\end{aligned}$$

$$\begin{aligned}4y - 3(20 - y) &= 6y - 7(11 - y) - 1 \\4y - 60 + 3y &= 6y - 77 + 7y - 1 \\7y - 60 &= 13y - 78 \\-6y &= -18 \\y &= 3\end{aligned}$$

$$6x - 5(2x - 7) - 4(7x + 4) = 23(2 - x) \quad x = -3$$

$$2(y - 5) + 15 = 3(y - 4) + 10 \quad y = 7$$

$$\frac{x}{3} + \frac{x}{5} = x - \frac{35}{3} \quad x = 25$$

$$\frac{x}{2} - 3 = x + 1 \quad x = \cancel{-7} - 8$$

$$\frac{5x}{4} - \frac{x}{3} - 3 = \frac{x}{2} + \frac{1}{3} \quad x = 8$$

$$3(x - 1) + 2(x + 2) = 3(x + 1)$$
$$\begin{array}{rcl} 3x - 3 + 2x + 4 & = & 3x + 3 \\ \cancel{5x} & & \cancel{5x+1} = 3x + 3 \\ & & \cancel{2x} = \cancel{3x} \\ & & x = 1 \end{array}$$

$$3x - 2(x + 1) = 5(2x - 3) + 2$$

$$\begin{array}{rcl} 3x - 2x - 2 & = & 10x - 15 + 2 \\ x - 2 & = & 10x - 13 \\ x - 10x & = & -13 + 2 \\ -9x & = & -11 \\ x & = & \frac{11}{9} \end{array}$$

$$3(x-1) + 5 = x + 2(x+1)$$

$$3x - 3 + 5 = x + 2x + 2$$

$$3x + 2 = 3x + 2 \quad | -2; -3x$$

$$3x - 3x = 2 - 2$$

$$0 = 0$$

$$\boxed{x \in \mathbb{R}}$$

nekonečné  
mnoho řešení

$\mathbb{R}$  - množina reálných  
čísel

$$\frac{(3x-1)^{\frac{6}{3}}}{3} - x^{\frac{6}{6}} + 1^{\frac{6}{6}} = \frac{(3x-2)^{\frac{6}{6}}}{6} - \frac{x^{\frac{6}{2}}}{2} \quad | \cdot 6$$

$$2(3x-1) - 6x + 6 = 3x-2 - 3x$$

$$6x-2 > 6x+6 = -2$$

$$4 \neq -2 \quad | -4$$

$$0 \neq -6 \rightarrow \text{NESMYSL}$$

NEMA REŠENI

$$x \in \emptyset \text{ (prázdná množina)}$$

