

Datum: *do 5. 2. 2021*

Jméno:

Dyslektici nemusí počítat **modré příklady**.

1) Řeš rovnici s neznámou x a proved' zkoušku:

$$3x + 5 = 2x + 11$$

$$\begin{aligned} 3x - 2x &= 11 - 5 & \text{Zk: } L &= 3 \cdot 6 + 5 = \\ & & &= 18 + 5 = 23 \\ \underline{x} &= \underline{6} & P &= 2 \cdot 6 + 11 = \\ & & &= 12 + 11 = 23 \\ & & & \boxed{L=P} \end{aligned}$$

$$9x - 5 + 3x - 19 = 0$$

$$\begin{aligned} 12x - 24 &= 0 & \text{Zk: } L &= 9 \cdot 2 - 5 + 3 \cdot 2 - 19 = \\ 12x &= 24 & &= 18 - 5 + 6 - 19 = 0 \\ \underline{x} &= \underline{2} & P &= 0 \\ & & & \boxed{L=P} \end{aligned}$$

$$8 \cdot (2x - 3) = 4 \cdot (x + 1)$$

$$\begin{aligned} 16x - 24 &= 4x + 4 & \text{Zk: } L &= 8 \cdot (2 \cdot \frac{4}{3} - 3) = \\ 16x - 4x &= 4 + 24 & &= 8 \cdot \frac{14 - 9}{3} = \frac{8 \cdot 5}{3} = \frac{40}{3} \\ 12x &= 28 & P &= 4 \cdot (\frac{7}{3} + 1) = \\ \underline{x} &= \frac{28}{12} & &= 4 \cdot \frac{10}{3} = \frac{40}{3} \\ \underline{x} &= \frac{7}{3} & & \boxed{L=P} \end{aligned}$$

$$4 \cdot (7 - 3x) = 5 - 2x$$

$$\begin{aligned} 28 - 12x &= 5 - 2x & \text{Zk: } L &= 4 \cdot (7 - 3 \cdot 2,3) = \\ 23 &= 10x & &= 4 \cdot (7 - 6,9) = 0,4 \\ \underline{x} &= \underline{2,3} & P &= 5 - 2 \cdot 2,3 = 0,4 \\ & & & \boxed{L=P} \end{aligned}$$

$$12 - \frac{x}{3} = 15 \quad | \cdot 3$$

$$\begin{aligned} 36 - x &= 45 \\ -x &= 9 & \text{Zk: } L &= 12 - \frac{-9}{3} = 15 \\ \underline{x} &= \underline{-9} & P &= 15 \\ & & & \boxed{L=P} \end{aligned}$$

$$\frac{2x}{5} + 7 = \frac{x+8}{3} + 5 \quad | \cdot 15$$

$$\begin{aligned} 6x + 105 &= 5x + 40 + 75 \\ 6x + 105 &= 5x + 115 & \text{Zk: } L &= \frac{20}{5} + 7 = \\ \underline{x} &= \underline{10} & &= \frac{11}{1} = 11 \\ & & P &= 6 + 5 = 11 \\ & & & \boxed{L=P} \end{aligned}$$

2) Urči, pro která x nemá rovnice smysl:

$$\frac{5}{x} + 1 = 3$$

$$\boxed{x=0}$$

$$\frac{2}{x-1} - 4 = 0$$

$$\boxed{x=1}$$

$$\frac{x+1}{x} + \frac{6}{x-2} = 1$$

$$\boxed{\begin{matrix} x_1=0 \\ x_2=2 \end{matrix}}$$

$$\frac{1}{3x} - \frac{x}{7-2x} = 5$$

$$\boxed{\begin{matrix} x_1=0 \\ x_2=\frac{7}{2} \end{matrix}}$$

$$\frac{2}{3} - 5x = 27$$

má smysl vždy

$$7 + \frac{x+6}{10} = -6$$

má smysl vždy

3) Řeš rovnici s neznámou x a proved' zkoušku (nezapomeň na podmínky):

$$\frac{18}{x} = 6$$

$$\boxed{x \neq 0}$$

$$18 = 6x$$

$$\underline{x = 3}$$

$$\text{Zk: } L = \frac{18}{3} = \underline{6}$$

$$P = \underline{6}$$

$$\boxed{L = P}$$

$$\frac{12}{x} + 3 = 6$$

$$\cdot x$$

$$\boxed{x \neq 0}$$

$$12 + 3x = 6x$$

$$12 = 3x$$

$$\underline{x = 4}$$

$$\text{Zk: } L = \frac{12}{4} + 3 = \underline{6}$$

$$P = \underline{6}$$

$$\boxed{L = P}$$

$$\frac{20}{x} + 7 = 12 - \frac{5}{x}$$

$$\cdot x \quad \boxed{x \neq 0}$$

$$20 + 7x = 12x - 5$$

$$25 = 5x$$

$$\underline{x = 5}$$

$$\text{Zk: } L = \frac{20}{5} + 7 = \underline{11}$$

$$P = 12 - \frac{5}{5} = \underline{11}$$

$$\boxed{L = P}$$

$$\frac{24}{x+6} - 1 = 3$$

$$\cdot (x+6) \quad \boxed{x \neq -6}$$

$$24 - 1 \cdot (x+6) = 3 \cdot (x+6)$$

$$24 - x - 6 = 3x + 18$$

$$-x + 18 = 3x + 18$$

$$0 = 4x$$

$$\underline{x = 0}$$

$$\text{Zk: } L = \frac{24}{6} - 1 =$$

$$= \underline{3}$$

$$P = \underline{3}$$

$$\boxed{L = P}$$

$$\frac{16}{x} + \frac{40}{2x} = 18$$

$$\cdot 2x \quad \boxed{x \neq 0}$$

$$2x \cdot \frac{16}{x} + 2x \cdot \frac{40}{2x} = 18 \cdot 2x$$

$$32 + 40 = 36x$$

$$72 = 36x$$

$$\underline{x = 2}$$

$$\text{Zk: } L = \frac{16}{2} + \frac{40}{4} = 8 + 10 = \underline{18}$$

$$P = \underline{18}$$

$$\boxed{L = P}$$

$$\frac{28}{x} + 1 = \frac{18}{x+2} + 3$$

$$\cdot x \cdot (x+2)$$

$$\boxed{x \neq 0}$$

$$\boxed{x \neq -2}$$

$$28 \cdot (x+2) + x^2 + 2x = 18x + 3x^2 + 6x$$

$$28x + 56 + x^2 + 2x = 3x^2 + 24x$$

$$x^2 + 30x + 56 = 3x^2 + 24x$$

$$-2x^2 + 6x + 56 = 0 \quad /: (-2)$$

$$x^2 - 3x - 28 = 0$$

$$(x - 7) \cdot (x + 4) = 0$$

$$\underline{x_1 = 7}$$

$$\underline{x_2 = -4}$$

ještě neumíme,
pode na kvadratickou rovnici!