

Handwritten text in Arabic script, possibly a title or heading, consisting of several lines of calligraphic characters.

Handwritten text in Arabic script, possibly a name or a short phrase.

Handwritten text in Arabic script, possibly a signature or a date.

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

$$4x - 12 = 2x + 10 \quad / -2x$$

$$2x - 12 = 10 \quad / +12$$

$$2x = 22 \quad / :2$$

$$x = 11 \quad \checkmark$$

SK.

$$L = 4(x-3) = 4 \cdot (11-3) = 4 \cdot 8 = 32 \text{ V}$$

$$P = 2(x+5) = 2 \cdot (11+5) = 2 \cdot 16 = 32 \text{ L}$$

$$\underline{L = P}$$

$$2x - (8x-1) - (x+2) \cdot 5 = 9$$

$$2x - 8x + 1 - 5x - 10 = 9$$

$$-11x - 9 = 9 \quad / +9$$

$$-11x = 18 \quad / : (-11)$$

$$x = -\frac{18}{11}$$

SK.

$$L = 2x - (8x-1) - (x+2) \cdot 5 =$$

$$= 2 \cdot \left(-\frac{18}{11}\right) - \left(8 \cdot \left(-\frac{18}{11}\right) - 1\right) - \left(-\frac{18}{11} + 2\right) \cdot 5 =$$

$$= -\frac{36}{11} - \left(-\frac{144}{11} - \frac{11}{11}\right) - \left(-\frac{18}{11} + \frac{22}{11}\right) \cdot 5 =$$

$$= -\frac{36}{11} - \left(-\frac{155}{11}\right) - \left(\frac{4}{11} \cdot 5\right) =$$

$$= -\frac{36}{11} + \frac{155}{11} - \frac{20}{11} = \frac{155}{11} - \frac{56}{11} = \frac{99}{11} = 9 \text{ V}$$

$$P = 9 \text{ V}$$

$$\underline{L = P}$$

$$10x - 1 = 15 - 6x \quad | +6x$$

$$16x - 1 = 15 \quad | +1$$

$$16x = 16 \quad | :16$$

$$x = 1$$

Sk

$$C = 10x - 1 = 10 \cdot 1 - 1 = 10 - 1 = 9 \checkmark$$

$$P = 15 - 6x = 15 - 6 \cdot 1 = 15 - 6 = 9 \checkmark$$

$$C = P$$

3

$$9x - 8 = 11x - 10 \quad | -11x$$

$$-2x - 8 = -10 \quad | +8$$

$$-2x = -2 \quad | :(-2)$$

$$x = 1$$

Sk

$$C = 9x - 8 = 9 \cdot 1 - 8 = 9 - 8 = 1 \checkmark$$

$$P = 11x - 10 = 11 \cdot 1 - 10 = 11 - 10 = 1 \checkmark$$

$$C = P$$

4

$$\textcircled{3} \quad \frac{x}{2} + \frac{x}{3} = 6 \quad | \cdot 6$$

$$\textcircled{2} \quad 6 \cdot \frac{x}{2} + 6 \cdot \frac{x}{3} = 6 \cdot 6$$

$$3x + 2x = 36$$

$$5x = 36$$

$$x = \frac{36}{5}$$

Sk

$$C = \frac{x}{2} + \frac{x}{3} = \frac{36}{5} \cdot \frac{1}{2} + \frac{36}{5} \cdot \frac{1}{3} =$$
$$= \frac{36}{5} \cdot \frac{1}{2} + \frac{36}{5} \cdot \frac{1}{3} = \frac{36}{10} + \frac{36}{15} =$$
$$= \frac{108}{30} + \frac{72}{30} = \frac{180}{30} = 6$$

P = 6 ✓ C = P

5

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

$$x^2 - 2x + 2x - 4 - (x^2 - 6x + 9) = -1$$

$$x^2 - 4 - x^2 + 6x - 9 = -1$$

$$6x - 13 = -1 \quad | +13$$

$$6x = 12 \quad | :6$$

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

6

SK

$$L = (x+2)(x-2) - (x-3)^2 =$$

$$= (2+2)(2-2) - (2-3)^2 =$$

$$= 4 \cdot 0 - (-1)^2 = - (+1) = -1$$

$P = -1$

L = P

$$\frac{x}{2} + \frac{x}{4} - x = 2 \quad | \cdot 4$$

$$\textcircled{2} \quad 4 \cdot \frac{x}{2} + \textcircled{1} \quad 4 \cdot \frac{x}{4} - 4x = 4 \cdot 2$$

4

$$2x + x - 4x = 8$$

$$-3x + 2x = 8$$

$$-x = 8 \quad | \cdot (-1)$$

$$\underline{\underline{x = -8}}$$

SK

$$L = \frac{-8}{2} + \frac{-8}{4} - (-8) = -4 - 2 + 8 =$$

$$= -6 + 8 = 2 \checkmark$$

$P = 2 \checkmark$

$L = P$

$$(6x-5)(x-2) - (3x-1)(2x-3) = 1$$

8

$$6x^2 - 12x - 5x + 10 - (6x^2 - 9x - 2x + 3) = 1$$

$$6x - 17x + 10 - 6x^2 + 11x - 3 = 1$$

$$-6x + 4 = 1 \quad | -4$$

$$-6x = -6 \quad | : (-6)$$

$$x = 1 \quad \checkmark$$

Sk

$$L = (6x-5)(x-2) - (3x-1)(2x-3) =$$

$$= (6 \cdot 1 - 5)(1 - 2) - (3 \cdot 1 - 1)(2 \cdot 1 - 3) =$$

$$= (6 - 5)(-1) - (3 - 1)(2 - 3) =$$

$$= 1 \cdot (-1) - (2 \cdot (-1)) = -1 - (-2) =$$

$$= -1 + 2 = 1 \quad \checkmark$$

$$P = 1 \quad \checkmark$$

$$L = P$$

$$2(3+4x) - 2 = 3 - 5(1-x)$$

9

$$6 + 8x - 2 = 3 - 5 + 5x$$

$$8x + 4 = 5x - 2 \quad | -5x$$

$$3x + 4 = -2 \quad | -4$$

$$3x = -6 \quad | :3$$

$$x = -2$$

Sk

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

$$= 2(3-8) - 2 = 2 \cdot (-5) - 2 = -10 - 2 = -12 \checkmark$$

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

$$= 3 - 5(1+2) = 3 - 5 \cdot 3 = 3 - 15 = -12 \checkmark$$

$$L = P$$

$$2(x-1) - 3(x-2) + 4(x-3) = 2(x+5)$$

10

$$2x - 2 - 3x + 6 + 4x - 12 = 2x + 10$$

$$3x - 8 = 2x + 10 \quad | -2x$$

$$x - 8 = 10 \quad | +8$$

$$x = 18$$

Sk

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

$$= 2(18-1) - 3(18-2) + 4(18-3) =$$

$$= 2 \cdot 17 - 3 \cdot 16 + 4 \cdot 15 = 34 - 48 + 60 =$$

$$= 94 - 48 = 46 \checkmark$$

$$P = 2(x+5) = 2(18+5) = 2 \cdot 23 = 46 \checkmark$$

$$L = P$$

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

$$4x - 4 + 8 = 2x + 6 - 1$$

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

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

$$2x = 1 \quad | :2$$

$$x = \frac{1}{2}$$

11

$$\begin{aligned} \text{SK} \quad \checkmark \\ L &= 4(x-1) + 8 = 4 \cdot \left(\frac{1}{2} - 1\right) + 8 = 4 \cdot \left(-\frac{1}{2}\right) + 8 = \\ &= -2 + 8 = 6 \checkmark \end{aligned}$$

$$\begin{aligned} P &= 2(x+3) - 1 = 2 \left(\frac{1}{2} + 3\right) - 1 = 2 \cdot \frac{1}{2} + 2 \cdot 3 - 1 = \\ &= 1 + 6 - 1 = 6 \checkmark \\ L &= P \end{aligned}$$

$$8x - (x+3) + (x-1) \cdot 3 = 0$$

$$8x - x - 3 + 3x - 3 = 0$$

$$10x - 6 = 0 \quad | +6$$

$$10x = 6 \quad | :10$$

$$x = \frac{6}{10}$$

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

12

$$\text{SK} \quad \checkmark \quad L = 8x - (x+3) + (x-1) \cdot 3 =$$

$$= 8 \cdot \frac{3}{5} - \left(\frac{3}{5} + 3\right) + \left(\frac{3}{5} - 1\right) \cdot 3 =$$

$$= \frac{24}{5} - \left(\frac{3}{5} + \frac{15}{5}\right) + \left(\frac{3}{5} - \frac{5}{5}\right) \cdot 3 =$$

$$= \frac{24}{5} - \frac{18}{5} + \left(-\frac{2}{5}\right) \cdot 3 = \frac{24}{5} - \frac{18}{5} - \frac{6}{5} = 0$$

$$P = 0$$

$$L = P$$

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



$$\textcircled{4} \cdot \frac{5}{\textcircled{2}} + \textcircled{1} \cdot \frac{(2-3x)}{\textcircled{8}} = \textcircled{2} \cdot \frac{(4x+3)}{\textcircled{4}} - \textcircled{8} \cdot x$$

$$20 + (2-3x) = 2(4x+3) - 8x$$

$$\underline{20+2} - 3x = \underline{8x+6} - 8x$$

$$-3x + 22 = +6 \quad | -22$$

$$-3x = -16 \quad | : (-3)$$

$$x = \frac{16}{3}$$

SK

$$L = \frac{5}{2} + \frac{2-3x}{8} = \frac{5}{2} + \frac{2-3 \cdot \frac{16}{3}}{8} =$$

$$= \frac{5}{2} + \frac{2-16}{8} = \frac{5}{2} - \frac{14}{8} = \frac{20}{8} - \frac{14}{8} = \frac{6}{8} = \frac{3}{4} \checkmark$$

$$P = \frac{4x+3}{4} - x = \frac{4 \cdot \frac{16}{3} + 3}{4} - \frac{16}{3} =$$

$$= \frac{\frac{64}{3} + \frac{9}{3}}{4} - \frac{16}{3} = \frac{\frac{73}{3}}{\frac{4}{1}} - \frac{16}{3} =$$

$$= \frac{73}{12} - \frac{64}{12} = \frac{9}{12} = \frac{3}{4} \checkmark$$

$$L = P$$

$$\frac{3+5x}{2} - \frac{x-1}{6} - \frac{1}{3} = \frac{5}{2} - \frac{3x+5}{2}$$

$$\frac{3+5x}{2} - \frac{x-1}{6} - \frac{1}{3} = \frac{5}{2} - \frac{\frac{3x+5}{1}}{\frac{3}{2}}$$

$$\frac{3+5x}{2} - \frac{x-1}{6} - \frac{1}{3} = \frac{5}{2} - \frac{2(3x+5)}{3} \quad / \cdot 6$$

$$\textcircled{6} \cdot \frac{\textcircled{3} (3+5x)}{\textcircled{1} 2} - \textcircled{6} \cdot \frac{\textcircled{1} (x-1)}{\textcircled{1} 6} - \textcircled{6} \cdot \frac{\textcircled{1}}{\textcircled{1} 3} = \textcircled{6} \cdot \frac{\textcircled{3} 5}{\textcircled{1} 2} - \textcircled{6} \cdot \frac{\textcircled{2} 2(3x+5)}{\textcircled{1} 3}$$

$$3(3+5x) - (x-1) - 2 = 15 - 4(3x+5)$$

$$9 + 15x - x + 1 - 2 = 15 - 12x - 20$$

$$14x + 8 = -12x - 5 \quad / +12x$$

$$26x + 8 = -5 \quad / -8$$

$$26x = -13 \quad / :26$$

$$x = -\frac{13}{26} = -\frac{1}{2}$$

skúška 

$$L = \frac{3+5x}{2} - \frac{x-1}{6} - \frac{1}{3} =$$

$$= \frac{3 + 5 \cdot (-\frac{1}{2})}{2} - \frac{-\frac{1}{2} - 1}{6} - \frac{1}{3} =$$

$$= \frac{3 - \frac{5}{2}}{2} - \frac{-\frac{3}{2}}{6} - \frac{1}{3} = \frac{\frac{1}{2}}{2} + \frac{3}{12} - \frac{1}{3} =$$

$$= \frac{1}{4} + \frac{1}{4} - \frac{1}{3} = \frac{2}{4} - \frac{1}{3} = \frac{6-4}{12} = \frac{2}{12} = \frac{1}{6} \quad \checkmark$$

$$P = \frac{5}{2} - \frac{3x+5}{\frac{3}{2}} =$$

$$= \frac{5}{2} - \frac{3 \cdot \left(-\frac{1}{2}\right) + 5}{\frac{3}{2}} =$$

$$= \frac{5}{2} - \frac{-\frac{3}{2} + \frac{10}{2}}{\frac{3}{2}} = \frac{5}{2} - \frac{\frac{7}{2}}{\frac{3}{2}} =$$

$$= \frac{5}{2} - \frac{14}{6} = \frac{5}{2} - \frac{7}{3} = \frac{15-14}{6} = \underline{\underline{\frac{1}{6}}} \checkmark$$

$$C = P$$

$$\frac{5}{2} - \frac{3x-2}{0,2} = \frac{x-0,1}{0,3} \quad | \cdot 6$$

$$\textcircled{3} \quad \textcircled{6} \cdot \frac{5}{2} - \frac{\textcircled{30} (3x-2)}{\textcircled{0,2}} = \frac{\textcircled{20} (x-0,1)}{\textcircled{0,3}} \quad \textcircled{1}$$

$$3 \cdot 5 - 30(3x-2) = 20(x-0,1)$$

$$15 - 90x + 60 = 20x - 2$$

$$-90x + 75 = 20x - 2 \quad | -20x$$

$$-110x + 75 = -2 \quad | -75$$

$$-110x = -77$$

$$x = 0,7 = \frac{7}{10}$$

SK

$$\bar{L} = \frac{5}{2} - \frac{3x-2}{0,2} = \frac{5}{2} - \frac{3 \cdot \frac{7}{10} - 2}{\frac{2}{10}} =$$

$$= \frac{5}{2} - \frac{\frac{21}{10} - \frac{20}{10}}{\frac{2}{10}} = \frac{5}{2} - \frac{\frac{1}{10}}{\frac{2}{10}} = \frac{5}{2} - \frac{10}{20} =$$

$$= \frac{5}{2} - \frac{1}{2} = \frac{4}{2} = 2 \quad \checkmark$$

$$P = \frac{x-0,1}{0,3} = \frac{\frac{7}{10} - \frac{1}{10}}{\frac{3}{10}} = \frac{\frac{6}{10}}{\frac{3}{10}} = \frac{60}{30} = 2 \quad \checkmark$$

$$\bar{L} = P$$

$$\frac{7x-2}{3} - \frac{4(x+3)}{5} + 6 = \frac{3(x+2)}{2} \quad / \cdot 30$$

16

$$\overset{10}{\cancel{30}} \cdot \frac{(7x-2)}{\cancel{3} \textcircled{1}} - \overset{\textcircled{6}}{\cancel{30}} \cdot \frac{4(x+3)}{\cancel{5} \textcircled{1}} + \cancel{30} \cdot 6 = \overset{\textcircled{15}}{\cancel{30}} \cdot \frac{3(x+2)}{\cancel{2} \textcircled{1}}$$

$$10(7x-2) - 24(x+3) + 180 = 45(x+2)$$

$$70x - 20 - 24x + 72 + 180 = 45x + 90$$

$$46x + 88 = 45x + 90 \quad / -45x$$

$$x + 88 = 90 \quad / -88$$

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

sk

$$L = \frac{7x-2}{3} - \frac{4(x+3)}{5} + 6 =$$

$$= \frac{7 \cdot 2 - 2}{3} - \frac{4(2+3)}{5} + 6 =$$

$$= \frac{14 - 2}{3} - \frac{4 \cdot 5}{5} + 6 = 4 - 4 + 6 = \underline{\underline{6}}$$

$$P = \frac{3(x+2)}{2} = \frac{3 \cdot (2+2)}{2} = \frac{3 \cdot 4}{2} = \underline{\underline{6}}$$

$$\underline{\underline{L = P}}$$

$$\frac{x+5}{3} - \frac{x}{2} = \frac{x-2}{3} - \frac{x-3}{2} \quad / \cdot 6$$

17

$$\overset{(2)}{\cancel{6}} \cdot \frac{(x+5)}{\overset{(1)}{\cancel{3}}} - \overset{(3)}{\cancel{6}} \cdot \frac{x}{\overset{(1)}{\cancel{2}}} = \overset{(2)}{\cancel{6}} \cdot \frac{(x-2)}{\overset{(1)}{\cancel{3}}} - \overset{(3)}{\cancel{6}} \cdot \frac{(x-3)}{\overset{(1)}{\cancel{2}}}$$

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

$$\underline{2x + 10} - \underline{3x} = \underline{2x - 4} - \underline{3x + 9}$$

$$-x + 10 = -x + 5 \quad / +x$$

$$\underline{\underline{10 \neq 5}}$$

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$$\frac{3x-1}{5} - \frac{5x+1}{6} = \frac{x+1}{8} - 3 \quad / \cdot 120$$

$$\overset{(24)}{120} \cdot \frac{(3x-1)}{\cancel{5}^1} - \overset{(20)}{120} \cdot \frac{(5x+1)}{\cancel{6}^1} = \overset{(15)}{120} \cdot \frac{(x+1)}{\cancel{8}^1} - 120 \cdot 3$$

$$24(3x-1) - 20(5x+1) = 15(x+1) - 360$$

$$72x - 24 - 100x - 20 = 15x + 15 - 360$$

$$-28x - 44 = 15x - 345 \quad / -15x$$

$$-43x - 44 = -345 \quad / +44$$

$$-43x = -301 \quad / : (-43)$$

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

SK

$$L = \frac{3x-1}{5} - \frac{5x+1}{6} = \frac{3 \cdot 7-1}{5} - \frac{5 \cdot 7+1}{6} =$$

$$= \frac{21-1}{5} - \frac{35+1}{6} = \frac{20}{5} - \frac{36}{6} = 4-6 = -2$$

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

$$L = P$$

$$\frac{x-5}{5} - \frac{x-3}{20} = \frac{4x-9}{10} - \frac{7x+1}{25} \quad / \cdot 100$$

$$\overset{(20)}{100} \cdot \frac{(x-5)}{\underset{\textcircled{1}}{5}} - \overset{(5)}{100} \cdot \frac{(x-3)}{\underset{\textcircled{1}}{20}} = \overset{(10)}{100} \cdot \frac{(4x-9)}{\underset{\textcircled{1}}{10}} - \overset{(4)}{100} \cdot \frac{(7x+1)}{\underset{\textcircled{1}}{25}}$$

$$20(x-5) - 5(x-3) = 10(4x-9) - 4(7x+1)$$

$$20x - 100 - 5x + 15 = 40x - 90 - 28x - 4$$

$$15x - 85 = 12x - 94 \quad / -12x$$

$$3x - 85 = -94 \quad / +85$$

$$3x = -9 \quad / :3$$

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

$$\overset{sk}{\bar{L}} = \frac{x-5}{5} - \frac{x-3}{20} = \frac{-3-5}{5} - \frac{-3-3}{20} =$$

$$= \frac{-8}{5} - \frac{-6}{20} = -\frac{32}{20} + \frac{6}{20} = -\frac{26}{20} = -\frac{13}{10} \checkmark$$

$$P = \frac{4x-9}{10} - \frac{7x+1}{25} =$$

$$= \frac{4 \cdot (-3) - 9}{10} - \frac{7 \cdot (-3) + 1}{25} =$$

$$= \frac{-12 - 9}{10} - \frac{-21 + 1}{25} = \frac{-21}{10} - \frac{-20}{25} =$$

$$= \frac{-105}{50} + \frac{40}{50} = -\frac{65}{50} = -\frac{13}{10} \checkmark$$

$$\bar{L} = P$$

$$\frac{2x-3}{3} - \frac{x-1}{4} = 2x-15 \quad / \cdot 12$$

20

$$\textcircled{4} \quad 12 \cdot \frac{(2x-3)}{\textcircled{3}} - 12 \cdot \frac{(x-1)}{\textcircled{4}} = 12 \cdot 2x - 12 \cdot 15$$

$$4(2x-3) - 3(x-1) = 24x - 180$$

$$8x - 12 - 3x + 3 = 24x - 180$$

$$\underline{5x - 9} = 24x - 180 \quad / -24x$$

$$-19x - 9 = -180 \quad | +9$$

$$-19x = -171 \quad / : (-19)$$

$$\underline{\underline{x = 9}}$$

SK

$$L = \frac{2x-3}{3} - \frac{x-1}{4} = \frac{2 \cdot 9-3}{3} - \frac{9-1}{4} =$$

$$= \frac{18-3}{3} - \frac{8}{4} = \frac{15}{3} - 2 = 5 - 2 = 3$$

$$P = 2x - 15 = 2 \cdot 9 - 15 = 18 - 15 = 3$$

$$\underline{\underline{L = P}}$$

$$\frac{3}{8} [10(x-5) + x] = 4x - 6\frac{1}{4}$$

$$\frac{3}{8} [10x - 50 + x] = 4x - \frac{25}{4} \quad / \cdot 8$$

$$\textcircled{1} \quad 8 \cdot \frac{3}{8} [11x - 50] = 8 \cdot 4x - \textcircled{2} \cdot \frac{25}{4} \quad \swarrow \textcircled{1}$$

$$\textcircled{1} \quad 3(11x - 50) = 32x - 50$$

$$33x - 150 = 32x - 50 \quad / - 32x$$

$$x - 150 = -50 \quad / + 150$$

$$\underline{x = 100}$$

sk

$$L = \frac{3}{8} [10(x-5) + x] = \frac{3}{8} [10(100-5) + 100] =$$

$$= \frac{3}{8} (10 \cdot 95 + 100) = \frac{3}{8} \cdot (950 + 100) =$$

$$= \frac{3}{8} \cdot 1050 = \frac{3150}{8} = \frac{1575}{4} \quad \checkmark$$

$$P = 4x - 6\frac{1}{4} = 4 \cdot 100 - \frac{25}{4} = 400 - \frac{25}{4} =$$

$$= \frac{1600}{4} - \frac{25}{4} = \frac{1575}{4} \quad \checkmark$$

$$L = P$$

$$x - \frac{1 - \frac{3x}{2}}{4} - \frac{2 - \frac{x}{4}}{3} = 2 \quad / \cdot 12$$

$$12x - \overset{\textcircled{3}}{12} \cdot \frac{(1 - \frac{3x}{2})}{4} - \overset{\textcircled{4}}{12} \cdot \frac{(2 - \frac{x}{4})}{3} = 12 \cdot 2$$

$$12x - 3 \overset{\textcircled{1}}{(1 - \frac{3x}{2})} - 4 \overset{\textcircled{1}}{(2 - \frac{x}{4})} = 24$$

$$\underline{12x - 3} + \underline{\frac{9x}{2} - 8} + \underline{x} = 24$$

$$13x + \frac{9x}{2} - 11 = 24 \quad / \cdot 2$$

$$26x + 9x - 22 = 48$$

$$35x - 22 = 48 \quad / + 22$$

$$35x = 70 \quad / : 35$$

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

ek.

$$L = x - \frac{1 - \frac{3x}{2}}{4} - \frac{2 - \frac{x}{4}}{3} =$$

$$= 2 - \frac{1 - \frac{3 \cdot 2}{2}}{4} - \frac{2 - \frac{2}{4}}{3} =$$

$$= 2 - \frac{1 - \frac{6}{2}}{4} - \frac{2 - \frac{1}{2}}{3} = 2 - \frac{1-3}{4} - \frac{\frac{3}{2}}{\frac{3}{1}} =$$

$$= 2 - \frac{-2}{4} - \frac{3}{6} = 2 + \frac{2}{4} - \frac{3}{6} = 2 + \frac{1}{2} - \frac{1}{2} = 2 \checkmark$$

$$P = 2$$

$$L = P$$

$$-\frac{1}{6}x + \frac{3}{5} + \frac{4}{3}x - \frac{7}{10} - \frac{1}{2}x = \frac{4}{5} + \frac{2}{5}x - \frac{1}{2} \quad /: 30$$

25

$$-\overset{\textcircled{5}}{\cancel{30}} \cdot \frac{1}{\textcircled{6}} x + \overset{\textcircled{6}}{\cancel{30}} \cdot \frac{3}{\textcircled{5}} + \overset{\textcircled{10}}{\cancel{30}} \cdot \frac{4}{\textcircled{3}} x - \overset{\textcircled{3}}{\cancel{30}} \cdot \frac{7}{\textcircled{10}} - \overset{\textcircled{15}}{\cancel{30}} \cdot \frac{1}{\textcircled{2}} x = \overset{\textcircled{6}}{\cancel{30}} \cdot \frac{4}{\textcircled{5}} + \overset{\textcircled{6}}{\cancel{30}} \cdot \frac{2}{\textcircled{5}} x - \overset{\textcircled{15}}{\cancel{30}} \cdot \frac{1}{\textcircled{2}}$$

$$\underline{-5x} + \underline{18} + \underline{40x} - \underline{21} - \underline{15x} = \underline{24} + \underline{12x} - \underline{15}$$

$$20x - 3 = 12x + 9 \quad /-12x$$

$$8x - 3 = 9 \quad |+3$$

$$8x = 12 \quad /: 8$$

$$x = \frac{12}{8}$$

$$x = \frac{3}{2}$$

$$\overset{SK}{L} = -\frac{1}{6}x + \frac{3}{5} + \frac{4}{3}x - \frac{7}{10} - \frac{1}{2}x =$$

$$= -\frac{1}{6} \cdot \frac{3}{2} + \frac{3}{5} + \frac{4}{3} \cdot \frac{3}{2} - \frac{7}{10} - \frac{1}{2} \cdot \frac{3}{2} =$$

$$= -\frac{3}{12} + \frac{3}{5} + \frac{12}{6} - \frac{7}{10} - \frac{3}{4} = -\frac{1}{4} + \frac{3}{5} + 2 - \frac{7}{10} - \frac{3}{4} =$$

$$= 2 + \frac{-5 + 12 - 14 - 15}{20} = 2 + \frac{-34 + 12}{20} = 2 - \frac{12}{20} =$$

$$= \frac{40}{20} - \frac{12}{20} = \frac{18}{20} = \frac{9}{10} \quad \checkmark$$

$$P = \frac{4}{5} + \frac{2}{5}x - \frac{1}{2} = \frac{4}{5} + \frac{2}{5} \cdot \frac{3}{2} - \frac{1}{2} =$$

$$= \frac{4}{5} + \frac{6}{10} - \frac{1}{2} = \frac{8 + 6 - 5}{10} = \frac{14 - 5}{10} = \frac{9}{10} \quad \checkmark$$

$$\tilde{L} = P$$

$$2x - \frac{2}{3} - \frac{2}{3}x - \frac{3}{4} = x + \frac{1}{6} + \frac{1}{3}x - 1 \quad / \cdot 12$$

$$12 \cdot 2x - 12 \cdot \frac{2}{3} - 12 \cdot \frac{2}{3}x - 12 \cdot \frac{3}{4} = 12 \cdot x + 12 \cdot \frac{1}{6} + 12 \cdot \frac{1}{3}x - 12 \cdot 1$$

$$24x - 4 \cdot 2 - 4 \cdot 2x - 3 \cdot 3 = 12x + 2 \cdot 1 + 4x - 12 \cdot 1$$

$$24x - 8 - 8x - 9 = 12x + 2 + 4x - 12$$

$$16x - 17 = 16x - 10 \quad / -16x$$

$$-17 \neq -10$$

ROVNICA NEMÁ RIEŠENIE

$$\frac{7}{6}x - \frac{1}{3} + x - \frac{5}{2} = \frac{1}{6}x + 2 - \frac{7}{2} + \frac{2}{3}x \quad | \cdot 6$$

$$\textcircled{1} \cdot \frac{4}{\textcircled{1}} x - \textcircled{2} \cdot \frac{1}{\textcircled{1}} + \textcircled{3} \cdot x - \textcircled{3} \cdot \frac{5}{\textcircled{1}} = \textcircled{1} \cdot \frac{1}{\textcircled{1}} x + \textcircled{3} \cdot 2 - \textcircled{3} \cdot \frac{7}{\textcircled{1}} + \textcircled{2} \cdot \frac{2}{\textcircled{1}} x$$

$$\frac{4x}{1} - 2 + \frac{6x}{1} - \frac{15}{1} = \frac{x}{1} + 12 - \frac{21}{1} + \frac{4x}{1}$$

$$13x - 17 = 5x - 9 \quad | -5x$$

$$8x - 17 = -9 \quad | +17$$

$$8x = 8$$

$$x = 1$$

SK:

$$L = \frac{7}{6}x - \frac{1}{3} + x - \frac{5}{2} = \frac{7}{6} \cdot 1 - \frac{1}{3} + 1 - \frac{5}{2} =$$

$$= \frac{7}{6} - \frac{1}{3} + 1 - \frac{5}{2} = 1 + \frac{7-2-15}{6} = 1 + \frac{7-17}{6} =$$

$$= 1 - \frac{10}{6} = \frac{6}{6} - \frac{10}{6} = -\frac{4}{6} = -\frac{2}{3} \checkmark$$

$$P = \frac{1}{6}x + 2 - \frac{7}{2} + \frac{2}{3}x = \frac{1}{6} \cdot 1 + 2 - \frac{7}{2} + \frac{2}{3} \cdot 1 =$$

$$= \frac{1}{6} + \frac{12}{6} - \frac{7}{2} + \frac{2}{3} = \frac{1+12-21+4}{6} = \frac{17-21}{6} =$$

$$= -\frac{4}{6} = -\frac{2}{3} \checkmark$$

$$L = P$$

$$\frac{9}{4}x - \frac{1}{2} - 2x = \frac{5}{4}x - 2 - \frac{3}{4}x - \frac{1}{8} \quad | \cdot 8$$

$$\overset{(2)}{\cancel{8}} \cdot \frac{9}{4}x - \overset{(4)}{\cancel{8}} \cdot \frac{1}{2} - \cancel{8} \cdot 2x = \overset{(2)}{\cancel{8}} \cdot \frac{5}{4}x - \cancel{8} \cdot 2 - \overset{(2)}{\cancel{8}} \cdot \frac{3}{4}x - \overset{(1)}{\cancel{8}} \cdot \frac{1}{8} \quad \overset{(1)}{\cancel{8}}$$

$$18x - 4 - 16x = 10x - 16 - 6x - 1$$

$$2x - 4 = 4x - 17 \quad | - 2x$$

$$-4 = 2x - 17 \quad | + 17$$

$$13 = 2x \quad | : 2$$

$$x = \frac{13}{2}$$

SK

$$L = \frac{9}{4}x - \frac{1}{2} - 2x = \frac{9}{4} \cdot \frac{13}{2} - \frac{1}{2} - 2 \cdot \frac{13}{2} =$$

$$= \frac{117}{8} - \frac{1}{2} - \frac{26}{2} = \frac{117}{8} - \frac{27}{2} = \frac{117}{8} - \frac{108}{8} =$$

$$= \frac{9}{8} \quad \checkmark$$

$$P = \frac{5}{4}x - 2 - \frac{3}{4}x - \frac{1}{8} = \frac{5}{4} \cdot \frac{13}{2} - 2 - \frac{3}{4} \cdot \frac{13}{2} - \frac{1}{8} =$$

$$= \frac{65}{8} - \frac{16}{8} - \frac{39}{8} - \frac{1}{8} = \frac{65}{8} - \frac{56}{8} = \frac{9}{8} \quad \checkmark$$

$$L = P$$

$$\frac{1}{5} - \frac{3x+2}{2} + \frac{2x-1}{10} = \frac{x+3}{5} \cdot 10$$

$$\textcircled{2} \cdot \frac{1}{\cancel{10}} - \frac{\textcircled{5} \cdot (3x+2)}{\cancel{2} \cdot \textcircled{1}} + \frac{\textcircled{1} \cdot (2x-1)}{\cancel{10} \cdot \textcircled{1}} = \frac{\textcircled{2} \cdot (x+3)}{\cancel{5} \cdot \textcircled{1}}$$

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

$$2 - 15x - 10 + 2x - 1 = 2x + 6$$
$$-13x - 9 = 2x + 6 \quad | -2x$$

$$-15x - 9 = 6 \quad | +9$$
$$-15x = 15 \quad | : (-15)$$

$$\underline{\underline{x = -1}}$$

$$\checkmark \quad L = \frac{1}{5} - \frac{3x+2}{2} + \frac{2x-1}{10} = \frac{1}{5} - \frac{3(-1)+2}{2} + \frac{2(-1)-1}{10} =$$

$$= \frac{1}{5} - \frac{-3+2}{2} + \frac{-2-1}{10} = \frac{1}{5} - \frac{-1}{2} + \frac{-3}{10} =$$

$$= \frac{1}{5} + \frac{1}{2} - \frac{3}{10} = \frac{2+5-3}{10} = \frac{7-3}{10} = \frac{4}{10} = \frac{2}{5} \checkmark$$

$$P = \frac{x+3}{5} = \frac{-1+3}{5} = \frac{2}{5} \checkmark$$

$$L = P$$

$$\frac{1}{3}x - \frac{2x-1}{4} + \frac{x+2}{6} = \frac{x+4}{3} \quad | \cdot 12$$

$$\textcircled{4} \cdot 12 \cdot \frac{1}{3}x - \textcircled{3} \cdot 12 \cdot \frac{2x-1}{4} + \textcircled{2} \cdot 12 \cdot \frac{x+2}{6} = \textcircled{4} \cdot 12 \cdot \frac{x+4}{3}$$

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

$$4x - 6x + 3 + 2x + 2 = 4x + 16$$

$$-9 = 4x \quad | : 4$$

$$x = -\frac{9}{4}$$

SK

$$L = \frac{1}{3}x - \frac{2x-1}{4} + \frac{x+2}{6} =$$

$$= \frac{1}{3} \cdot \left(-\frac{9}{4}\right) - \frac{2 \cdot \left(-\frac{9}{4}\right) - 1}{4} + \frac{-\frac{9}{4} + 2}{6} =$$

$$= -\frac{3}{4} - \frac{-\frac{9}{2} - \frac{2}{2}}{4} + \frac{-\frac{9}{4} + \frac{8}{4}}{6} =$$

$$= -\frac{3}{4} - \frac{\ominus \frac{11}{2}}{\frac{4}{1}} + \frac{-\frac{1}{4}}{\frac{6}{1}} = -\frac{3}{4} + \frac{11}{8} - \frac{1}{24} =$$

$$= \frac{-18}{24} + \frac{33}{24} - \frac{1}{24} = \frac{33-19}{24} = \frac{14}{24} = \frac{7}{12} \checkmark$$

$$P = \frac{x+4}{3} = \frac{-\frac{9}{4} + \frac{16}{4}}{3} = \frac{\frac{7}{4}}{\frac{3}{1}} = \frac{7}{12} \checkmark$$

$$L = P$$

$$\frac{x+4}{6} - \frac{1}{2}x = \frac{2x+5}{3} - \frac{3x+1}{2} \quad | \cdot 6$$

$$\overset{\textcircled{1}}{\cancel{6}} \cdot \frac{(x+4)}{\overset{\textcircled{1}}{\cancel{6}}} - \overset{\textcircled{3}}{\cancel{6}} \cdot \frac{x}{\overset{\textcircled{1}}{\cancel{2}}} = \overset{\textcircled{2}}{\cancel{6}} \cdot \frac{(2x+5)}{\overset{\textcircled{1}}{\cancel{3}}} - \overset{\textcircled{3}}{\cancel{6}} \cdot \frac{(3x+1)}{\overset{\textcircled{1}}{\cancel{2}}}$$

$$x+4 - 3x = 2(2x+5) - 3(3x+1)$$

$$\underline{x+4} - \underline{3x} = \underline{4x+10} - \underline{9x-3}$$

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

$$3x + 4 = 4 \quad | -4$$

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

$$\underline{\underline{x = 1}}$$

sk.

$$L = \frac{x+4}{6} - \frac{1}{2}x = \frac{1+4}{6} - \frac{1}{2} \cdot 1 = \frac{5}{6} - \frac{1}{2} =$$

$$= \frac{5}{6} - \frac{3}{6} = \frac{2}{6} = \frac{1}{3} \checkmark$$

$$P = \frac{2x+5}{3} - \frac{3x+1}{2} = \frac{2 \cdot 1 + 5}{3} - \frac{3 \cdot 1 + 1}{2} =$$

$$= \frac{2+5}{3} - \frac{3+1}{2} = \frac{7}{3} - \frac{4}{2} = \frac{14-12}{6} = \frac{2}{6} = \frac{1}{3} \checkmark$$

$$L = P$$

$$\frac{3(x-2)}{3} + \frac{5}{6} - \frac{4x+1}{2} = -\frac{3}{2}x + \frac{x-4}{3} \quad / \cdot 6 \quad \text{③}$$

$$\text{②} \quad \frac{6 \cdot 3(x-2)}{3} + \frac{6 \cdot 5}{6} - \frac{6 \cdot (4x+1)}{2} = -6 \cdot \frac{3}{2}x + 6 \cdot \frac{(x-4)}{3}$$

$$6(x-2) + 5 - 3(4x+1) = -9x + 2(x-4)$$

$$\underline{6x - 12} + 5 - \underline{12x - 3} = -9x + \underline{2x - 8}$$

$$-6x - 10 = -7x - 8 \quad / +7x$$

$$x - 10 = -8 \quad / +10$$

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

SK:

$$L = \frac{3(x-2)}{3} + \frac{5}{6} - \frac{4x+1}{2} =$$

$$= \frac{3 \cdot (2-2)}{3} + \frac{5}{6} - \frac{4 \cdot 2 + 1}{2} =$$

$$= \frac{3 \cdot 0}{3} + \frac{5}{6} - \frac{9}{2} = 0 + \frac{5}{6} - \frac{27}{6} = -\frac{22}{6} \checkmark$$

$$P = -\frac{3}{2}x + \frac{x-4}{3} = -\frac{3}{2} \cdot 2 + \frac{2-4}{3} =$$

$$= -3 + \frac{-2}{3} = -\frac{18}{6} - \frac{4}{6} = -\frac{22}{6} \checkmark$$

$$\underline{\underline{L = P}}$$

$$-\frac{11}{3} = -\frac{11}{3}$$

$$\frac{3-x}{2} - \left(\frac{4-x}{3} - \frac{x+3}{4} \right) = \frac{9+4x}{8} - \left(\frac{4-x}{6} + x \right)$$

31

$$\frac{3-x}{2} - \frac{4-x}{3} + \frac{x+3}{4} = \frac{9+4x}{8} - \frac{4-x}{6} - x \quad | \cdot 24$$

$$\textcircled{12} \cdot \frac{(3-x)}{2} - \textcircled{8} \cdot \frac{(4-x)}{3} + \textcircled{6} \cdot \frac{(x+3)}{4} = \textcircled{3} \cdot \frac{(9+4x)}{8} - \textcircled{4} \cdot \frac{(4-x)}{6} - 24x$$

$$12(3-x) - 8(4-x) + 6(x+3) = 3(9+4x) - 4(4-x) - 24x$$

$$36 - 12x - 56 + 8x + 6x + 18 = 27 + 21x - 28 + 4x - 24x$$

$$2x - 2 = x + 27 - 28$$

$$2x - 2 = x - 1 \quad | -x$$

$$x - 2 = -1 \quad | +2$$

$$\underline{\underline{x = 1}}$$

SK:

$$L = \frac{3-x}{2} - \left(\frac{4-x}{3} - \frac{x+3}{4} \right) = \frac{3-1}{2} - \left(\frac{4-1}{3} - \frac{1+3}{4} \right) =$$

$$= \frac{2}{2} - \left(\frac{6}{3} - \frac{4}{4} \right) = 1 - (2-1) = 1 - 1 = \underline{\underline{0}} \quad \checkmark$$

$$P = \frac{9+4x}{8} - \left(\frac{4-x}{6} + x \right) = \frac{9+4 \cdot 1}{8} - \left(\frac{4-1}{6} + 1 \right) =$$

$$= \frac{9+4}{8} - \left(\frac{6}{6} + 1 \right) = \frac{16}{8} - (1+1) = 2 - 2 = \underline{\underline{0}} \quad \checkmark$$

$$L = P$$

$$(x-3)^2 - \frac{2}{5}(x+1) = (x-5)(x+5) + 8$$

$$(x^2 - 6x + 9) - \frac{2}{5}(x+1) = x^2 - 5x + 5x - 25 + 8$$

$$x^2 - 6x + 9 - \frac{2}{5}(x+1) = x^2 - 14 \quad | \cdot 5$$

$$5x^2 - 5 \cdot 6x + 5 \cdot 9 - \frac{2}{5}(x+1) = 5x^2 - 5 \cdot 14$$

$$5x^2 - 30x + 45 - 2x - 2 = 5x^2 - 85$$

$$5x^2 - 32x + 43 = 5x^2 - 85 \quad | -5x^2$$

$$-32x + 43 = -85 \quad | -43$$

$$-32x = -128 \quad | :(-32)$$

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

$$\overset{SK}{L} = (x-3)^2 - \frac{2}{5}(x+1) = (4-3)^2 - \frac{2}{5}(4+1) =$$

$$= 1^2 - \frac{2}{5} \cdot 5 = 1 - 2 = \underline{\underline{-1}} \quad \checkmark$$

$$P = (x-5)(x+5) + 8 = (4-5)(4+5) + 8 =$$

$$= -1 \cdot 9 + 8 = -9 + 8 = \underline{\underline{-1}} \quad \checkmark$$

$$\underline{\underline{L = P}}$$

$$(x-2)(x+2) + 3(x-1)^2 = -\frac{1}{2}(12-8x^2) - x$$

$$x^2 - 2x + 2x - 4 + 3(x^2 - 2x + 1) = -6 + 4x^2 - x$$

$$x^2 - 4 + 3x^2 - 6x + 3 = 4x^2 - x - 6$$

$$4x^2 - 6x - 1 = 4x^2 - x - 6 \quad | -4x^2$$

$$-6x - 1 = -x - 6 \quad | +x$$

$$-5x - 1 = -6 \quad | +1$$

$$-5x = -5 \quad | : (-5)$$

$$\underline{\underline{x = 1}}$$

33

Sk.

$$\hat{C} = (x-2)(x+2) + 3(x-1)^2 =$$

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

$$= -1 \cdot 3 + 3 \cdot 0 = -3 + 0 = \underline{\underline{-3}} \quad \checkmark$$

$$P = -\frac{1}{2}(12-8x^2) - x =$$

$$= -\frac{1}{2}(12-8 \cdot 1^2) - 1 =$$

$$= -\frac{1}{2}(12-8 \cdot 1) - 1 =$$

$$= -\frac{1}{2}(12-8) - 1 = -\frac{1}{2}(4) - 1 = -2 - 1 = -3 \quad \checkmark$$

$$\underline{\underline{\hat{C} = P}}$$

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

39

$$2x - \overset{\textcircled{1}}{2} \cdot \frac{(2x-3)}{2} + 2 = 2 - 2 \cdot 2x$$

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

$$2x - 2x + 3 + 2 = 2 - 4x$$

$$5 = 2 - 4x \quad | -2$$

$$-4x = 3 \quad | : (-4)$$

$$x = -\frac{3}{4}$$

Sk.

$$\hat{L} = x - \frac{2x-3}{2} + 1 = -\frac{3}{4} - \frac{2 \cdot \left(-\frac{3}{4}\right) - 3}{2} + 1 =$$

$$= -\frac{3}{4} - \frac{\frac{-6}{4} - \frac{12}{4}}{2} + 1 = -\frac{3}{4} - \frac{-\frac{18}{4}}{2} + 1 =$$

$$= -\frac{3}{4} + \frac{18}{8} + \frac{8}{8} = \frac{-6}{8} + \frac{26}{8} = \frac{20}{8} = \frac{10}{4} = \frac{5}{2} \checkmark$$

$$P = 1 - 2x = 1 - 2 \cdot \left(-\frac{3}{4}\right) = 1 + \frac{6}{4} =$$

$$= 1 + \frac{3}{2} = \frac{5}{2} \checkmark$$

$$\hat{L} = P$$

$$\frac{12x-3}{4} + \frac{1}{6}x - \frac{8x-3}{2} = \frac{3-x}{2} - 1 \quad / \cdot 12$$

$$\overset{\textcircled{3}}{12} \cdot \frac{12x-3}{\cancel{4}^{\textcircled{1}}} + \overset{\textcircled{2}}{12} \cdot \frac{1}{\cancel{6}^{\textcircled{1}}}x - \overset{\textcircled{6}}{12} \cdot \frac{(8x-3)}{\cancel{2}^{\textcircled{1}}} = \overset{\textcircled{6}}{12} \cdot \frac{(3-x)}{\cancel{2}^{\textcircled{1}}} - 12 \cdot 1$$

$$3(12x-3) + 2x - 6(8x-3) = 6(3-x) - 12$$

$$\underline{36x-9} + \underline{2x} - \underline{48x+18} = \underline{18-6x-12}$$

$$-10x + 9 = -6x + 6 \quad / +6x$$

$$-4x + 9 = 6 \quad / -9$$

$$-4x = -3 \quad / : (-4)$$

$$x = \frac{3}{4}$$

$$\underline{\underline{\frac{3}{4}}}$$

Sk.

$$L = \frac{12x-3}{4} + \frac{1}{6}x - \frac{8x-3}{2} = \frac{12 \cdot \frac{3}{4} - 3}{4} + \frac{1}{6} \cdot \frac{3}{4} - \frac{8 \cdot \frac{3}{4} - 3}{2} =$$

$$= \frac{\frac{36}{4} - 3}{4} + \frac{3}{24} - \frac{\frac{24}{4} - 3}{2} = \frac{9-3}{4} + \frac{1}{8} - \frac{6-3}{2} =$$

$$= \frac{6}{4} + \frac{1}{8} - \frac{3}{2} = \frac{12+1-12}{8} = \frac{1}{8} \checkmark$$

$$P = \frac{3-x}{2} - 1 = \frac{3 - \frac{3}{4}}{2} - 1 = \frac{\frac{9}{4}}{2} - 1 =$$

$$= \frac{\frac{9}{4}}{\frac{2}{1}} - 1 = \frac{9}{8} - 1 = \frac{9}{8} - \frac{8}{8} = \frac{1}{8} \checkmark$$

$$L = P$$

$$\frac{5(2x+1)}{7} - \frac{x-2}{2} = \frac{6x+4}{14} - \frac{3}{7} - \frac{2(x-1)}{2} \quad / \cdot 14$$

$$\frac{14 \cdot 5(2x+1)}{7 \cdot 2} - \frac{14 \cdot (x-2)}{2 \cdot 1} = \frac{14 \cdot (6x+4)}{14} - \frac{14 \cdot 3}{7 \cdot 2} - \frac{14 \cdot 2(x-1)}{2 \cdot 1}$$

$$2 \cdot 5(2x+1) - 7(x-2) = 1 \cdot (6x+4) - 6 - 7 \cdot 2(x-1)$$

$$10(2x+1) - 7x+14 = 6x+4 - 6 - 14(x-1)$$

$$20x + 10 - 7x + 14 = 6x + 4 - 6 - 14x + 14$$

$$13x + 24 = -8x + 12 \quad / +8x$$

$$21x + 24 = 12 \quad / -24$$

$$21x = -12 \quad / : 21$$

$$x = -\frac{12}{21}$$

$$x = -\frac{4}{7}$$

TO BUILE SKILSKOTT

$$\overset{SK}{L} = \frac{5(2x+1)}{7} - \frac{x-2}{2} = \frac{5 \cdot (2 \cdot (-\frac{4}{7}) + 1)}{7} - \frac{-\frac{4}{7} - 2}{2} =$$

$$= \frac{5 \cdot (-\frac{8}{7} + \frac{7}{7})}{7} - \frac{-\frac{4}{7} - \frac{14}{7}}{2} = \frac{5 \cdot (-\frac{1}{7})}{7} - \frac{-\frac{18}{7}}{2} =$$

$$= -\frac{\frac{5}{7}}{\frac{7}{1}} + \frac{\frac{18}{7}}{\frac{2}{1}} = -\frac{5}{49} + \frac{18}{14} = -\frac{5}{49} + \frac{9}{7} =$$

$$= -\frac{5}{49} + \frac{63}{49} = \frac{58}{49} \quad \text{NO FUDS!}$$

$$\begin{aligned}
 P &= \frac{6x+4}{14} - \frac{3}{7} - \frac{2(x-1)}{2} = \\
 &= \frac{6 \cdot \left(-\frac{4}{7}\right) + 4}{14} - \frac{3}{7} - \frac{2 \cdot \left(-\frac{4}{7} - 1\right)}{2} = \\
 &= \frac{-\frac{24}{7} + \frac{28}{7}}{14} - \frac{3}{7} - \frac{2 \cdot \left(-\frac{4}{7} - \frac{7}{7}\right)}{2} = \\
 &= \frac{\frac{4}{7}}{\frac{14}{1}} - \frac{3}{7} - \frac{2 \cdot \left(-\frac{11}{7}\right)}{2} = \\
 &= \frac{4}{98} - \frac{42}{98} - \frac{22}{7} = \\
 &= -\frac{38}{98} + \frac{22}{14} = -\frac{38}{98} + \frac{154}{98} = \frac{116}{98} =
 \end{aligned}$$

$$= \frac{58}{49} \checkmark$$

$$\bar{C} = P$$

NE CHUTNE! ☺

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

37

$$\overset{\textcircled{1}}{8} \cdot \frac{2(3x-1)}{\overset{\textcircled{1}}{8}} - \overset{\textcircled{2}}{8} \cdot \frac{(4x-3)}{\overset{\textcircled{1}}{4}} + \overset{\textcircled{4}}{8} \cdot \frac{3}{\overset{\textcircled{1}}{2}} = \overset{\textcircled{4}}{8} \cdot \frac{3(x+1)}{\overset{\textcircled{1}}{2}} + \overset{\textcircled{2}}{8} \cdot \frac{(x+5)}{\overset{\textcircled{1}}{4}}$$

$$2(3x-1) - 2(4x-3) + 12 = 12(x+1) + 2(x+5)$$

$$6x - 2 - 8x + 6 + 12 = 12x + 12 + 2x + 10$$

$$-2x + 16 = 14x + 22 \quad | -14x$$

$$-16x + 16 = 22 \quad | -16$$

$$-16x = 6 \quad | : (-16)$$

$$x = -\frac{6}{16}$$

$$x = -\frac{3}{8}$$

TO BUDE SWISKA!

SK.

$$L = \frac{2(3x-1)}{8} - \frac{4x-3}{4} + \frac{3}{2} =$$

$$= \frac{2 \cdot \left(3 \cdot \left(-\frac{3}{8} \right) - 1 \right)}{8} - \frac{4 \cdot \left(-\frac{3}{8} \right) - 3}{4} + \frac{3}{2} =$$

$$= \frac{2 \cdot \left(-\frac{9}{8} - \frac{8}{8} \right)}{8} - \frac{\frac{12}{8} - \frac{24}{8}}{4} + \frac{3}{2} =$$

$$= \frac{2 \cdot -\frac{17}{8}}{8} - \frac{\frac{36}{8}}{4} + \frac{3}{2} =$$

$$= -\frac{\frac{34}{8}}{\frac{8}{1}} + \frac{\frac{36}{8}}{\frac{4}{1}} + \frac{3}{2} =$$

$$= -\frac{34}{64} + \frac{36}{32} + \frac{3}{2} =$$

$$= -\frac{17}{32} + \frac{36}{32} + \frac{48}{32} = -\frac{17}{32} + \frac{84}{32} =$$

$$= \frac{67}{32} \checkmark$$

$$P = \frac{3(x+1)}{2} + \frac{5+x}{4} =$$

$$= \frac{3\left(\left(-\frac{3}{8}\right)+1\right)}{2} + \frac{-\frac{3}{8}+5}{4} =$$

$$= \frac{3\left(-\frac{3}{8}+\frac{8}{8}\right)}{2} + \frac{-\frac{3}{8}+\frac{40}{8}}{4} =$$

$$= \frac{3 \cdot \frac{5}{8}}{2} + \frac{\frac{37}{8}}{4} = \frac{\frac{15}{8}}{\frac{2}{1}} + \frac{\frac{37}{8}}{\frac{4}{1}} =$$

$$= \frac{15}{16} + \frac{37}{32} = \frac{30}{32} + \frac{37}{32} = \frac{67}{32} \checkmark$$

BRRR 😊

$$L = P$$

$$\frac{5(x+2)-2}{6} + \frac{x-1}{3} + \frac{4}{9}x = \frac{3x+2}{2} - \frac{x-4}{9}$$

$$\frac{5x+10-2}{6} + \frac{x-1}{3} + \frac{4}{9}x = \frac{3x+2}{2} - \frac{x-4}{9}$$

$$\frac{5x+8}{6} + \frac{x-1}{3} + \frac{4}{9}x = \frac{3x+2}{2} - \frac{x-4}{9} \quad | \cdot 18$$

$$\frac{\textcircled{3} 18(5x+8)}{\textcircled{6} \textcircled{1}} + \frac{\textcircled{6} 18(x-1)}{\textcircled{3} \textcircled{1}} + \frac{\textcircled{2} 18 \cdot \frac{4}{9}x}{\textcircled{1}} = \frac{\textcircled{9} 18(3x+2)}{\textcircled{2} \textcircled{1}} - \frac{\textcircled{2} 18(x-4)}{\textcircled{9} \textcircled{1}}$$

$$3(5x+8) + 6(x-1) + 8x = 9(3x+2) - 2(x-4)$$

$$15x + 24 + 6x - 6 + 8x = 27x + 18 - 2x + 8$$

$$29x + 18 = 25x + 26 \quad | -25x$$

$$4x + 18 = 26 \quad | -18$$

$$4x = 8 \quad | :4$$

$$x = 2$$

SK

$$L = \frac{5(x+2)-2}{6} + \frac{x-1}{3} + \frac{4}{9}x =$$

$$= \frac{5 \cdot (2+2)-2}{6} + \frac{2-1}{3} + \frac{4}{9} \cdot 2 =$$

$$= \frac{5 \cdot 4 - 2}{6} + \frac{1}{3} + \frac{8}{9} = \frac{18}{6} + \frac{1}{3} + \frac{8}{9} =$$

$$= 3 + \frac{3+8}{9} = 3 + \frac{11}{9} = 4 \frac{2}{9} \text{ V}$$

$$P = \frac{3x+2}{2} - \frac{x-4}{9} =$$

$$= \frac{3 \cdot 2 + 2}{2} + \frac{2 - 4}{9} =$$

$$= \frac{6+2}{2} - \frac{2}{9} = \frac{8}{2} + \frac{2}{9} = 4 + \frac{2}{9} \checkmark$$

$$L = P$$

$$\frac{2x+3}{2} - \frac{16x+20}{11} - \frac{1}{2} = \frac{x+2}{11} - \frac{6x-2}{22} \quad | \cdot 22 \quad (39)$$

$$\frac{(11) \cdot (2x+3)}{22} - \frac{(2) \cdot (16x+20)}{22} - \frac{(11) \cdot 1}{22} = \frac{(2) \cdot (x+2)}{22} - \frac{(1) \cdot (6x-2)}{22}$$

$$11(2x+3) - 2(16x+20) - 11 = 2(x+2) - 1(6x-2)$$

$$22x + 33 - 32x - 40 - 11 = 2x + 4 - 6x + 2$$

$$-10x - 18 = -4x + 6 \quad | +4x$$

$$-6x - 18 = 6 \quad | +18$$

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

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

$$\text{SK: } \underline{L} = \frac{2x+3}{2} - \frac{16x+20}{11} - \frac{1}{2} =$$

$$= \frac{2 \cdot (-4) + 3}{2} - \frac{16 \cdot (-4) + 20}{11} - \frac{1}{2} =$$

$$= \frac{-8+3}{2} - \frac{-64+20}{11} - \frac{1}{2} = \frac{-5}{2} + \frac{44}{11} - \frac{1}{2} =$$

$$= -\frac{6}{2} + 4 = -3 + 4 = \underline{1}$$

$$P = \frac{x+2}{11} - \frac{6x-2}{22} = \frac{-4+2}{11} - \frac{6 \cdot (-4) - 2}{22} =$$

$$= \frac{-2}{11} - \frac{-24-2}{22} = -\frac{2}{11} + \frac{26}{22} = -\frac{4}{22} + \frac{26}{22} =$$

$$= \frac{22}{22} = \underline{1} \quad \checkmark \quad L = P$$

$$\frac{4(x-2)}{2} - \frac{3x-5}{4} = \frac{1}{2} + \frac{5(x+1)}{4} - \frac{3}{4}x \quad | \cdot 4$$

3

$$\overset{2}{4} \cdot \frac{4(x-2)}{\overset{1}{2}} - \frac{\overset{1}{4}(3x-5)}{\overset{1}{4}} = \frac{\overset{2}{4} \cdot \frac{1}{\overset{1}{2}} + \frac{\overset{1}{4} \cdot 5(x+1)}{\overset{1}{4}} - \frac{\overset{1}{4} \cdot 3}{\overset{1}{4}} x$$

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

$$8x - 16 - 3x + 5 = 2 + 5x + 5 - 3x$$

$$5x - 11 = 2x + 7 \quad | -2x$$

$$3x - 11 = 7 \quad | +11$$

$$3x = 18 \quad | :3$$

$$\underline{x = 6}$$

Sk.

$$L = \frac{4(x-2)}{2} - \frac{3x-5}{4} = \frac{4 \cdot (6-2)}{2} - \frac{3 \cdot 6 - 5}{4} =$$

$$= \frac{4 \cdot 4}{2} - \frac{18-5}{4} = \frac{16}{2} - \frac{13}{4} = \frac{32-13}{4} = \frac{19}{4} \checkmark$$

$$P = \frac{1}{2} + \frac{5(x+1)}{4} - \frac{3}{4}x = \frac{1}{2} + \frac{5(6+1)}{4} - \frac{3}{4} \cdot 6 =$$

$$= \frac{1}{2} + \frac{5 \cdot 7}{4} - \frac{18}{4} = \frac{2}{4} + \frac{35}{4} - \frac{18}{4} =$$

$$= \frac{37}{4} - \frac{18}{4} = \frac{19}{4} \checkmark$$

$$L = P$$

$$X + \frac{x+4}{5} - \frac{5(x+1)}{6} = \frac{2-x}{3} + \frac{1}{10} \quad / \cdot 30$$

$$30 \cdot X + \frac{30 \cdot (x+4)}{5} - \frac{30 \cdot 5(x+1)}{6} = \frac{30 \cdot (2-x)}{3} + \frac{30 \cdot 1}{10}$$

$$30x + 6(x+4) - 25(x+1) = 10(2-x) + 3$$

$$30x + 6x + 24 - 25x - 25 = 20 - 10x + 3$$

$$11x - 1 = -10x + 23 \quad / +10x$$

$$21x - 1 = 23 \quad / +1$$

$$21x = 24$$
$$x = \frac{24}{21}$$

$$x = \frac{8}{7}$$

SK

$$L = X + \frac{x+4}{5} - \frac{5(x+1)}{6} =$$

$$= \frac{8}{7} + \frac{\frac{8}{7} + 4}{5} - \frac{5 \left(\frac{8}{7} + 1 \right)}{6} =$$

$$= \frac{8}{7} + \frac{\frac{8}{7} + \frac{28}{7}}{5} - \frac{5 \left(\frac{8}{7} + \frac{7}{7} \right)}{6} =$$

$$= \frac{8}{7} + \frac{\frac{36}{7}}{5} - \frac{5 \cdot \frac{15}{7}}{6} = \frac{8}{7} + \frac{36}{35} - \frac{75}{42} =$$

$$= \frac{8}{7} + \frac{36}{35} - \frac{75}{42} = \frac{8}{7} + \frac{36}{35} - \frac{25}{14} =$$

$$= \frac{240}{210} + \frac{216}{210} - \frac{375}{210} = \frac{456}{210} - \frac{375}{210} = \frac{81}{210}$$
$$= \frac{27}{70} \checkmark$$

$$P = \frac{2-x}{3} + \frac{1}{10} =$$

$$= \frac{2 - \frac{8}{7}}{3} + \frac{1}{10} = \frac{\frac{14}{7} - \frac{8}{7}}{3} + \frac{1}{10} =$$

$$= \frac{\frac{6}{7}}{\frac{3}{1}} + \frac{1}{10} = \frac{6}{21} + \frac{1}{10} =$$

$$= \frac{60}{210} + \frac{21}{210} = \frac{81}{210} = \frac{27}{70} \checkmark$$

$$L = P$$

$$\frac{5x-2}{12} + \frac{1}{3}x - \frac{3-2x}{4} = \frac{1}{2}x + \frac{4x-1}{6} \quad / \cdot 12 \quad (42)$$

$$\overset{\textcircled{1}}{12} \cdot \frac{(5x-2)}{\cancel{12}^{\textcircled{1}}} + \overset{\textcircled{4}}{12} \cdot \frac{x}{\cancel{3}^{\textcircled{1}}} - \overset{\textcircled{3}}{12} \cdot \frac{(3-2x)}{\cancel{4}^{\textcircled{1}}} = \overset{\textcircled{6}}{12} \cdot \frac{x}{\cancel{2}^{\textcircled{1}}} + \overset{\textcircled{2}}{12} \cdot \frac{(4x-1)}{\cancel{6}^{\textcircled{1}}}$$

$$5x-2 + 4x - 3(3-2x) = 6x + 2(4x-1)$$

$$5x-2 + 4x - 9 + 6x = 6x + 8x - 2$$

$$15x - 11 = 14x - 2 \quad / -14x$$

$$x - 11 = -2 \quad / +11$$

$$\underline{\underline{x = 9}}$$

sk.

$$\check{L} = \frac{5x-2}{12} + \frac{1}{3}x - \frac{3-2x}{4} =$$

$$= \frac{5 \cdot 9 - 2}{12} + \frac{1}{3} \cdot 9 - \frac{3 - 2 \cdot 9}{4} =$$

$$= \frac{45-2}{12} + 3 - \frac{3-18}{4} =$$

$$= \frac{43}{12} + 3 - \frac{-15}{4} = \frac{43}{12} + 3 + \frac{15}{4} =$$

$$= \frac{43}{12} + \frac{36}{12} + \frac{45}{12} = \frac{124}{12} = \frac{31}{3} \checkmark$$

$$P = \frac{1}{2}x + \frac{4x-1}{6} = \frac{1}{2} \cdot 9 + \frac{4 \cdot 9 - 1}{6} =$$

$$= \frac{9}{2} + \frac{36-1}{6} = \frac{9}{2} + \frac{35}{6} = \frac{27}{6} + \frac{35}{6} = \frac{62}{6} = \frac{31}{3} \checkmark$$

$$\check{L} = P$$

$$\frac{x-3}{2} + \frac{2(3x+4)}{6} - \frac{2x-2}{4} = \frac{x+5}{3} - \frac{7}{6} \quad / \cdot 12 \quad (43)$$

$$\overset{(6)}{12} \cdot \frac{(x-3)}{\overset{(1)}{2}} + \overset{(2)}{12} \cdot \frac{2 \cdot (3x+4)}{\overset{(1)}{6}} - \overset{(3)}{12} \cdot \frac{(2x-2)}{\overset{(1)}{4}} = \overset{(4)}{12} \cdot \frac{(x+5)}{\overset{(1)}{3}} - \overset{(2)}{12} \cdot \frac{7}{\overset{(1)}{6}}$$

$$6(x-3) + 4(3x+4) - 3(2x-2) = 4(x+5) - 14$$


$$6x - 18 + 12x + 16 - 6x + 6 = 4x + 20 - 14$$

$$12x + 4 = 4x + 6 \quad / - 4x$$

$$8x + 4 = 6 \quad / - 4$$

$$8x = 2 \quad | : 8$$

$$x = \frac{1}{4}$$

A) skaiškie? 
ANO

$$L^{sk} = \frac{x-3}{2} + \frac{2(3x+4)}{6} - \frac{2x-2}{4} =$$

$$= \frac{\frac{1}{4} - \frac{12}{4}}{2} + \frac{2(3 \cdot \frac{1}{4} + 4)}{6} - \frac{2 \cdot \frac{1}{4} - 2}{4} =$$

$$= \frac{-\frac{11}{4}}{\frac{2}{1}} + \frac{2 \cdot (\frac{3}{4} + \frac{16}{4})}{6} - \frac{\frac{2}{4} - \frac{8}{4}}{4} =$$

$$= -\frac{11}{8} + \frac{2 \cdot \frac{19}{4}}{6} - \frac{\frac{6}{4}}{\frac{1}{1}} =$$

$$= -\frac{11}{8} + \frac{\frac{38}{4}}{\frac{6}{1}} + \frac{6}{16} = -\frac{11}{8} + \frac{38}{24} + \frac{6}{16} =$$

$$= -\frac{66}{48} + \frac{76}{48} + \frac{18}{48} = -\frac{66}{48} + \frac{94}{48} = \frac{28}{48} =$$

$$= \frac{14}{24} = \frac{7}{12} \checkmark$$

$$P = \frac{X+5}{3} - \frac{7}{6} = \frac{4}{3} + \frac{20}{4} - \frac{7}{6} =$$

$$= \frac{\frac{21}{5}}{\frac{3}{2}} - \frac{7}{6} = \frac{21}{12} - \frac{14}{12} = \frac{7}{12} \checkmark$$

$$\bar{L} = P$$

OR TO TALK!

$$\frac{5(x-2)}{3} + \frac{8}{5} + \frac{2(3x+2)}{5} = \frac{5}{3}x + \frac{6}{5}x - 1 \quad / \cdot 15 \quad (44)$$

$$\overset{(5)}{15} \cdot \frac{5(x-2)}{\cancel{3} \textcircled{1}} + \overset{(3)}{15} \cdot \frac{8}{\cancel{5} \textcircled{1}} + \overset{(3)}{15} \cdot \frac{2(3x+2)}{\cancel{5} \textcircled{1}} = \overset{(5)}{15} \cdot \frac{5}{\cancel{3} \textcircled{1}} x + \overset{(3)}{15} \cdot \frac{6}{\cancel{5} \textcircled{1}} x - 15 \cdot 1$$

$$25(x-2) + 24 + 6(3x+2) = 25x + 18x - 15$$

$$\underline{25x - 50} + \underline{24} + \underline{18x + 12} = \underline{25x + 18x - 15}$$

$$43x - 14 = 43x - 15 \quad / -43x$$

$$-14 \neq -15$$

ROVNICA NEMÁ RIEŠENIE

$$\frac{2-11x}{9} - \frac{1}{3}x + \frac{2+3x}{6} = \frac{5}{18} - \frac{15x-8}{9} \cdot 18$$

$$18 \cdot \frac{(2-11x)}{9} - \frac{1}{3}x \cdot 18 + 18 \cdot \frac{(2+3x)}{6} = 18 \cdot \frac{5}{18} - 18 \cdot \frac{(15x-8)}{9}$$

$$2(2-11x) - 6 + 3(2+3x) = 5 - 2(15x-8)$$

$$4 - 22x - 6x + 6 + 9x = 5 - 30x + 16$$

$$-19x + 10 = -30x + 21 \quad | +30x$$

$$11x + 10 = 21 \quad | -10$$

$$11x = 11 \quad | :11$$

$$\underline{\underline{x = 1}}$$

Sk.

$$L = \frac{2-11x}{9} - \frac{1}{3}x + \frac{2+3x}{6} =$$

$$= \frac{2-11 \cdot 1}{9} - \frac{1}{3} \cdot 1 + \frac{2+3 \cdot 1}{6} =$$

$$= \frac{2-11}{9} - \frac{1}{3} + \frac{5}{6} = \frac{-9}{9} - \frac{2}{6} + \frac{5}{6} =$$

$$= -1 + \frac{3}{6} = -\frac{6}{6} + \frac{3}{6} = -\frac{3}{6} = -\frac{1}{2} \checkmark$$

$$P = \frac{5}{18} - \frac{15x-8}{9} = \frac{5}{18} - \frac{15 \cdot 1 - 8}{9} =$$

$$= \frac{5}{18} - \frac{7}{9} = \frac{5}{18} - \frac{14}{18} = \frac{-9}{18} = -\frac{1}{2} \checkmark$$

$$\underline{\underline{L = P}}$$

$$2 + \frac{4x+3}{8} - \frac{x+5}{4} = \frac{1}{2}x + \frac{2x+6}{4} \quad / \cdot 8$$

46

$$8 \cdot 2 + 8 \cdot \frac{(4x+3)}{8} - 8 \cdot \frac{(x+5)}{4} = 8 \cdot \frac{1}{2}x + 8 \cdot \frac{(2x+6)}{4}$$

$$16 + 1 \cdot (4x+3) - 2(x+5) = 4x + 2(2x+6)$$

$$16 + 4x + 3 - 2x - 10 = 4x + 4x + 12$$

$$2x + 9 = 8x + 12 \quad / - 8x$$

$$-6x + 9 = 12 \quad / - 9$$

$$-6x = 3 \quad / : (-6)$$

sk.

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

$$= 2 + \frac{4 \cdot (-\frac{1}{2}) + 3}{8} - \frac{-\frac{1}{2} + 5}{4} =$$

$$= 2 + \frac{-\frac{4}{2} + \frac{6}{2}}{8} - \frac{-\frac{1}{2} + \frac{10}{2}}{4} =$$

$$= 2 + \frac{\frac{2}{2}}{8} - \frac{\frac{9}{2}}{4} = 2 + \frac{1}{8} - \frac{9}{8} =$$

$$= \frac{16}{8} + \frac{1}{8} - \frac{9}{8} = \frac{8}{8} = 1 \quad \checkmark$$

$$P = \frac{1}{2}x + \frac{2x+6}{4} = \frac{1}{2} \cdot (-\frac{1}{2}) + \frac{2 \cdot (-\frac{1}{2}) + 6}{4} =$$

$$= -\frac{1}{4} + \frac{-1+6}{4} = -\frac{1}{4} + \frac{5}{4} = \frac{4}{4} = 1 \quad \checkmark$$

$$L = P$$

$$X - \frac{2x-4}{12} - \frac{3}{4}X = \frac{2x+3}{9} + \frac{2}{3} \quad / \cdot 36$$

47

$$36 \cdot X - \overset{\textcircled{3}}{36} \cdot \frac{(2x-4)}{\overset{\textcircled{1}}{12}} - \overset{\textcircled{9}}{36} \cdot \frac{3}{\overset{\textcircled{1}}{4}} X = \overset{\textcircled{4}}{36} \cdot \frac{(2x+3)}{\overset{\textcircled{1}}{9}} + \overset{\textcircled{12}}{36} \cdot \frac{2}{\overset{\textcircled{1}}{3}}$$

$$36x - 3(2x-4) - 27x = 4(2x+3) + 24$$

$$36x - 6x + 21 - 27x = 8x + 12 + 24$$

$$3x + 21 = 8x + 36 \quad / -8x$$

$$-5x + 21 = 36 \quad / -21$$

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

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

SK

$$L = X - \frac{2x-4}{12} - \frac{3}{4}X = -3 - \frac{2 \cdot (-3) - 4}{12} - \frac{3}{4} \cdot (-3) =$$

$$= -3 - \frac{-6-4}{12} + \frac{9}{4} = -3 - \frac{-10}{12} + \frac{9}{4} =$$

$$= -\frac{36}{12} + \frac{10}{12} + \frac{27}{12} = -\frac{36}{12} + \frac{37}{12} = \frac{1}{12} = \frac{1}{3} \checkmark$$

$$P = \frac{2x+3}{9} + \frac{2}{3} = \frac{2 \cdot (-3) + 3}{9} + \frac{2}{3} =$$

$$= \frac{-6+3}{9} + \frac{2}{3} = -\frac{3}{9} + \frac{2}{3} = -\frac{1}{3} + \frac{2}{3} = \frac{1}{3} \checkmark$$

$$\underline{\underline{L = P}}$$

$$\frac{9x-2}{20} - \frac{3}{5}x - \frac{5+x}{4} = \frac{9}{10} - \frac{4+x}{2} \quad | \cdot 20$$

48

$$\overset{\textcircled{1}}{20} \cdot \frac{\overset{\textcircled{1}}{(9x-2)}}{\overset{\textcircled{1}}{20}} - \overset{\textcircled{4}}{20} \cdot \frac{\overset{\textcircled{1}}{3}}{\overset{\textcircled{1}}{5}} x - \overset{\textcircled{5}}{20} \cdot \frac{\overset{\textcircled{1}}{(5+x)}}{\overset{\textcircled{1}}{4}} = \overset{\textcircled{2}}{20} \cdot \frac{\overset{\textcircled{1}}{9}}{\overset{\textcircled{1}}{10}} - \overset{\textcircled{10}}{20} \cdot \frac{\overset{\textcircled{1}}{(4+x)}}{\overset{\textcircled{1}}{2}}$$

$$9x-2-12x-5(5+x) = 18-10(4+x)$$

$$\underline{9x-2-12x-25-5x} = \underline{18-40-10x}$$

$$-8x-27 = -10x-22 \quad | +10x$$

$$2x-27 = -22 \quad | +27$$

$$2x = 5 \quad | :2$$

$$\underline{\underline{x = \frac{5}{2}}}$$

SK

$$L = \frac{9x-2}{20} - \frac{3}{5}x - \frac{5+x}{4} =$$

$$= \frac{9 \cdot \frac{5}{2} - 2}{20} - \frac{3}{5} \cdot \frac{5}{2} - \frac{5 + \frac{5}{2}}{4} =$$

$$= \frac{\frac{45}{2} - \frac{4}{2}}{20} - \frac{3}{2} - \frac{\frac{10}{2} + \frac{5}{2}}{4} =$$

$$= \frac{\frac{41}{2}}{20} - \frac{3}{2} - \frac{\frac{15}{2}}{4} = \frac{41}{40} - \frac{3}{2} - \frac{15}{8} =$$

$$= \frac{41}{40} - \frac{60}{40} - \frac{75}{40} = \frac{41}{40} - \frac{135}{40} = -\frac{94}{40} = -\frac{47}{20} \quad \checkmark$$

$$P = \frac{9}{10} - \frac{4+x}{2} = \frac{9}{10} - \frac{4 + \frac{5}{2}}{2} =$$

$$= \frac{9}{10} - \frac{\frac{8}{2} + \frac{5}{2}}{2} = \frac{9}{10} - \frac{\frac{13}{2}}{\frac{2}{1}} =$$

$$= \frac{9}{10} - \frac{13}{4} = \frac{18-65}{20} = -\frac{47}{20} \checkmark$$

$$\bar{L} = P$$

$$\frac{4(x-2)}{11} - \frac{5(x+1)}{22} + \frac{1}{2}x = \frac{3(x-3)}{11} + \frac{4x-1}{11} \quad / \cdot 22$$

$$\overset{(2)}{22} \cdot \frac{4(x-2)}{\overset{(1)}{11}} - \overset{(1)}{22} \cdot \frac{5(x+1)}{\overset{(1)}{22}} + \overset{(11)}{22} \cdot \frac{1}{\overset{(1)}{2}}x = \overset{(2)}{22} \cdot \frac{3(x-3)}{\overset{(1)}{11}} + \overset{(2)}{22} \cdot \frac{(4x-1)}{\overset{(1)}{11}}$$

$$8(x-2) - 5(x+1) + 11x = 6(x-3) + 2(4x-1)$$

$$\underline{8x - 16} - \underline{5x - 5} + \underline{11x} = \underline{6x - 18} + \underline{8x - 2}$$

$$14x - 21 = 14x - 20 \quad / -14x$$

$$-21 \neq -20$$

NEMA' RESENJE!

$$\frac{3(2-x)}{8} - \frac{6(x+3)}{2} - \frac{1}{4}x = \frac{5(x-1)}{4} - \frac{3(2x-2)}{2} \quad | \cdot 8$$

$$\overset{\textcircled{1}}{8} \cdot \frac{3(2-x)}{\overset{\textcircled{1}}{8}} - \overset{\textcircled{4}}{8} \cdot \frac{6(x+3)}{\overset{\textcircled{1}}{2}} - \overset{\textcircled{2}}{8} \cdot \frac{1}{\overset{\textcircled{1}}{4}}x = \overset{\textcircled{2}}{8} \cdot \frac{5(x-1)}{\overset{\textcircled{1}}{4}} - \overset{\textcircled{4}}{8} \cdot \frac{3(2x-2)}{\overset{\textcircled{1}}{2}}$$

$$3(2-x) - 24(x+3) - 2x = 10(x-1) - 12(2x-2)$$


$$\underline{6} - \underline{3x} - \underline{24x} - \underline{72} - \underline{2x} = \underline{10x} - \underline{10} - \underline{24x} + \underline{24}$$

$$-29x - 66 = -14x + 14 \quad | +14x$$

$$-15x - 66 = 14 \quad | +66$$

$$-15x = 80 \quad | : (-15)$$

$$x = -\frac{80}{15}$$

TO BUDE
CHYTKAVÁ
SKUŠKA!


$$x = -\frac{16}{3}$$

sk

$$\begin{aligned} L &= \frac{3(2-x)}{8} - \frac{6(x+3)}{2} - \frac{1}{4}x = \\ &= \frac{3 \cdot \left(2 - \left(-\frac{16}{3}\right)\right)}{8} - \frac{6 \cdot \left(-\frac{16}{3} + 3\right)}{2} - \frac{1}{4} \cdot \left(-\frac{16}{3}\right) = \\ &= \frac{3 \cdot \left(\frac{6}{3} + \frac{16}{3}\right)}{8} - \frac{6 \cdot \left(-\frac{16}{3} + \frac{9}{3}\right)}{2} + \frac{16}{12} = \\ &= \frac{3 \cdot \frac{22}{3}}{8} - \frac{6 \cdot \left(-\frac{7}{3}\right)}{2} + \frac{4}{3} = \end{aligned}$$

$$= \frac{22}{8} - \frac{-\frac{42}{3}}{\frac{2}{1}} + \frac{4}{3} = \frac{11}{4} + \frac{42}{6} + \frac{4}{3} =$$

$$= \frac{11}{4} + \frac{21}{3} + \frac{4}{3} = \frac{11}{4} + \frac{25}{3} = \frac{33+100}{12} = \frac{133}{12} \checkmark$$

$$P = \frac{5(x-1)}{4} - \frac{3(2x-2)}{2} =$$

$$= \frac{5\left(-\frac{16}{3}-1\right)}{4} - \frac{3\left(2\left(-\frac{16}{3}\right)-2\right)}{2} =$$

$$= \frac{5\left(-\frac{16}{3}-\frac{3}{3}\right)}{4} - \frac{3\left(-\frac{32}{3}-\frac{6}{3}\right)}{2} =$$

$$= \frac{5\left(-\frac{19}{3}\right)}{4} - \frac{3\left(-\frac{38}{3}\right)}{2} =$$

$$= -\frac{\frac{95}{3}}{\frac{4}{1}} + \frac{38}{2} = -\frac{95}{12} + \frac{228}{12} = \frac{133}{12} \checkmark$$

$$\overset{u}{L} = P$$

TO BOLA DIVOCINA 😊

$$\frac{16x-8}{12} - x + \frac{x+2}{6} - \frac{2(x+5)}{4} = \frac{1}{6} - \frac{3+2x}{2} \quad / \cdot 12$$

51

$$\frac{\textcircled{1} \cdot (16x-8)}{\cancel{12}^{\textcircled{1}}} - 12 \cdot x + \frac{\textcircled{2} \cdot (x+2)}{\cancel{6}^{\textcircled{1}}} - \frac{\textcircled{3} \cdot 2(x+5)}{\cancel{4}^{\textcircled{1}}} = \frac{\textcircled{2} \cdot 1}{\cancel{6}^{\textcircled{1}}} - \frac{\textcircled{6} \cdot (3+2x)}{\cancel{2}^{\textcircled{1}}}$$

$$16x - 8 - 12x + 2(x+2) - 6(x+5) = 2 - 6(3+2x)$$

$$16x - 8 - 12x + 2x + 4 - 6x - 30 = 2 - 18 - 12x$$

$$-34 = -12x - 16 \quad / +16$$

$$-12x = -18 \quad / : (-12)$$

$$x = \frac{18}{12}$$

$$x = \frac{3}{2}$$

Sk

$$L = \frac{16x-8}{12} - x + \frac{x+2}{6} - \frac{2(x+5)}{4} =$$

$$= \frac{\textcircled{8} \cdot 16 \cdot \frac{3}{2} - 8}{12} - \frac{3}{2} + \frac{\frac{3}{2} + 2}{6} - \frac{2 \left(\frac{3}{2} + 5 \right)}{4} =$$

$$= \frac{24 - 8}{12} - \frac{3}{2} + \frac{\frac{3}{2} + \frac{4}{2}}{6} - \frac{2 \left(\frac{3}{2} + \frac{10}{2} \right)}{4} =$$

$$= \frac{16}{12} - \frac{18}{12} + \frac{\frac{7}{2}}{6} - \frac{2 \cdot \frac{13}{2}}{4} =$$

$$= -\frac{2}{12} + \frac{7}{12} - \frac{\frac{26}{2}}{4} = \frac{5}{12} - \frac{26}{8} =$$

$$= \frac{10}{24} - \frac{78}{24} = -\frac{68}{24} = -\frac{17}{6} \quad \checkmark$$

$$P = \frac{1}{6} - \frac{3+2x}{2} = \frac{1}{6} - \frac{3+2\cdot\frac{3}{2}}{2} =$$

$$= \frac{1}{6} - \frac{3+3}{2} = \frac{1}{6} - \frac{6}{2} = \frac{1}{6} - \frac{18}{6} = -\frac{17}{6} \checkmark$$

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$$\bar{L} = P$$

$$\frac{7x+4}{12} - \frac{5x+2}{4} + \frac{3}{2}x = x+2 + \frac{2x-1}{6} \quad / \cdot 12$$

$$\overset{\textcircled{1}}{12} \cdot \frac{\overset{\textcircled{1}}{(7x+4)}}{\overset{\textcircled{1}}{12}} - \overset{\textcircled{3}}{12} \cdot \frac{\overset{\textcircled{3}}{(5x+2)}}{\overset{\textcircled{1}}{4}} + \overset{\textcircled{6}}{12} \cdot \frac{\overset{\textcircled{6}}{3}}{\overset{\textcircled{1}}{2}} x = 12x + 12 \cdot 2 + \overset{\textcircled{2}}{12} \cdot \frac{\overset{\textcircled{2}}{(2x-1)}}{\overset{\textcircled{1}}{6}}$$

$$7x+4 - 3(5x+2) + 18x = 12x + 24 + 2 \cdot (2x-1)$$

$$7x+4 - 15x - 6 + 18x = 12x + 24 + 4x - 2$$

$$10x - 2 = 16x + 22 \quad / -16x$$

$$-6x - 2 = 22 \quad / +2$$

$$-6x = 24 \quad / : (-6)$$

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

sk

$$L = \frac{7x+4}{12} - \frac{5x+2}{4} + \frac{3}{2}x =$$

$$= \frac{7 \cdot (-4) + 4}{12} - \frac{5 \cdot (-4) + 2}{4} + \frac{3}{2} \cdot (-4) =$$

$$= \frac{-28+4}{12} - \frac{-20+2}{4} - \frac{12}{2} =$$

$$= -\frac{24}{12} - \frac{-18}{4} - 6 = -2 + \frac{9}{2} - 6 =$$

$$= -8 + 4\frac{1}{2} = -3\frac{1}{2} \checkmark$$

$$P = x+2 + \frac{2x-1}{6} = -4 + 2 + \frac{2(-4)-1}{6} =$$

$$= -2 + \frac{-8-1}{6} = -2 + \frac{-9}{6} = -2 - 1\frac{3}{6} =$$

$$L = P = -3\frac{3}{6} = -3\frac{1}{2} \checkmark$$

$$\frac{3(2x-1)}{20} + \frac{1}{5}x - \frac{5(1-2x)}{4} = \frac{2(5x+4)}{5} - \frac{3}{2} \quad / \cdot 20$$

53

$$\frac{\textcircled{1} 20 \cdot 3(2x-1)}{20 \textcircled{1}} + \frac{\textcircled{4} 20 \cdot \frac{1}{5}x}{\textcircled{1}} - \frac{\textcircled{5} 20 \cdot 5(1-2x)}{4 \textcircled{1}} = \frac{\textcircled{4} 20 \cdot 2(5x+4)}{5 \textcircled{1}} - \frac{\textcircled{10} 20 \cdot \frac{3}{2}}{2 \textcircled{1}}$$

$$3(2x-1) + 4x - 25(1-2x) = 8(5x+4) - 30$$

$$6x - 3 + 4x - 25 + 50x = 40x + 32 - 30$$

$$60x - 28 = 40x + 2 \quad / -40x$$

$$20x - 28 = 2 \quad / +28$$

$$20x = 30 \quad / :20$$

$$x = \frac{30}{20}$$

$$x = \frac{3}{2}$$

SK

$$L = \frac{3(2x-1)}{20} + \frac{1}{5}x - \frac{5(1-2x)}{4} =$$

$$= \frac{3(2 \cdot \frac{3}{2} - 1)}{20} + \frac{1}{5} \cdot \frac{3}{2} - \frac{5(1 - 2 \cdot \frac{3}{2})}{4} =$$

$$= \frac{3(\frac{6}{2} - 1)}{20} + \frac{3}{10} - \frac{5(1 - \frac{6}{2})}{4} =$$

$$= \frac{3 \cdot (3-1)}{20} + \frac{3}{10} - \frac{5 \cdot (1-3)}{4} =$$

$$= \frac{6}{20} + \frac{3}{10} - \frac{5 \cdot (-2)}{4} = \frac{6}{20} + \frac{6}{20} + \frac{10}{4} =$$

$$= \frac{12}{20} + \frac{50}{20} = \frac{62}{20} = \frac{31}{10} \quad \checkmark$$

$$P = \frac{2(5x+4)}{5} - \frac{3}{2} =$$

$$= \frac{2 \cdot \left(5 \cdot \frac{3}{2} + 4\right)}{5} - \frac{3}{2} =$$

$$= \frac{2 \cdot \left(\frac{15}{2} + \frac{8}{2}\right)}{5} - \frac{3}{2} =$$

$$= \frac{2 \cdot \frac{23}{2}}{5} - \frac{3}{2} =$$

$$= \frac{23}{5} - \frac{3}{2} = \frac{46}{10} - \frac{15}{10} = \frac{31}{10} \checkmark$$

$$\checkmark = P$$

$$\frac{5}{6} + x - \frac{2(2x-1)}{5} - \frac{7}{10} = \frac{2(4x+4)}{15} - \frac{1}{3}x \quad | \cdot 30$$

$$\overset{(5)}{\cancel{30}} \cdot \overset{(6)}{\cancel{5}} + 30 \cdot x - \overset{(6)}{\cancel{30}} \cdot \frac{2(2x-1)}{\cancel{5}} - \overset{(3)}{\cancel{30}} \cdot \frac{7}{\cancel{10}} = \overset{(2)}{\cancel{30}} \cdot \frac{2(4x+4)}{\cancel{15}} - \overset{(10)}{\cancel{30}} \cdot \frac{1}{\cancel{3}}x$$

$$25 + 30x - 12(2x-1) - 21 = 4(4x+4) - 10x$$

$$\underline{25} + \underline{30x} - \underline{24x} + \underline{12} - \underline{21} = \underline{16x} + \underline{16} - \underline{10x}$$

$$6x - 16 = 6x + 16 \quad | -6x$$

$$-16 \neq 16$$

54

ROVNICA NEMÁ RIEŠENIE!

$$\frac{11x-8}{15} + \frac{3}{5} + \frac{2(x+2)}{6} - \frac{1}{6}x = \frac{x+2}{3} + \frac{7}{10}x \quad | \cdot 30$$

SS

$$\overset{(2)}{\cancel{30}} \cdot \frac{(11x-8)}{\overset{(6)}{\cancel{15}}} + \overset{(6)}{\cancel{30}} \cdot \frac{3}{\overset{(5)}{\cancel{5}}} + \overset{(5)}{\cancel{30}} \cdot \frac{2(x+2)}{\overset{(6)}{\cancel{6}}} - \overset{(5)}{\cancel{30}} \cdot \frac{1}{\overset{(6)}{\cancel{6}}}x = \overset{(10)}{\cancel{30}} \cdot \frac{(x+2)}{\overset{(3)}{\cancel{3}}} + \overset{(3)}{\cancel{30}} \cdot \frac{7}{\overset{(10)}{\cancel{10}}}x$$

$$2(11x-8) + 18 + 10(x+2) - 5x = 10(x+2) + 21x$$

$$22x - 16 + 18 + 10x + 20 - 5x = 10x + 20 + 21x$$

$$27x + 22 = 31x + 20 \quad | -31x$$

$$-4x + 22 = 20 \quad | -22$$

$$-4x = -2 \quad | : (-4)$$

$$x = \frac{1}{2}$$

SK

$$L = \frac{11x-8}{15} + \frac{3}{5} + \frac{2(x+2)}{6} - \frac{1}{6}x =$$

$$= \frac{11 \cdot \frac{1}{2} - 8}{15} + \frac{3}{5} + \frac{2(\frac{1}{2} + 2)}{6} - \frac{1}{6} \cdot \frac{1}{2} =$$

$$= \frac{\frac{11}{2} - \frac{16}{2}}{15} + \frac{3}{5} + \frac{2(\frac{1}{2} + \frac{4}{2})}{6} - \frac{1}{12} =$$

$$= \frac{\frac{-5}{2}}{\frac{15}{1}} + \frac{3}{5} + \frac{2 \cdot \frac{5}{2}}{6} - \frac{1}{12} =$$

$$= -\frac{5}{30} + \frac{3}{5} + \frac{5}{6} - \frac{1}{12} = -\frac{1}{6} + \frac{3}{5} + \frac{5}{6} - \frac{1}{12} =$$

$$= \frac{4}{6} + \frac{3}{5} - \frac{1}{12} = \frac{40}{60} + \frac{36}{60} - \frac{5}{60} = \frac{71}{60} \checkmark$$

$$P = \frac{x+2}{3} + \frac{7}{10}x = \frac{\frac{1}{2}+2}{3} + \frac{7}{10} \cdot \frac{1}{2} =$$

$$= \frac{\frac{1}{2} + \frac{4}{2}}{3} + \frac{7}{20} = \frac{\frac{5}{2}}{\frac{3}{1}} + \frac{7}{20} =$$

$$= \frac{5}{6} + \frac{7}{20} = \frac{50+21}{60} = \frac{71}{60} \checkmark$$

$$\tilde{L} = P$$

$$\frac{5x-3}{7} + \frac{5-x}{4} - \frac{1}{2}(x+5) = -\frac{3(x+2)}{14} \quad | \cdot 28 \quad (56)$$

$$\overset{(4)}{28} \cdot \frac{(5x-3)}{\cancel{7}^{\textcircled{1}}} + \overset{(7)}{28} \cdot \frac{(5-x)}{\cancel{4}^{\textcircled{1}}} - \overset{(14)}{28} \cdot \frac{1}{\cancel{2}^{\textcircled{1}}}(x+5) = -\overset{(2)}{28} \cdot \frac{3(x+2)}{\cancel{14}^{\textcircled{1}}}$$

$$4(5x-3) + 7(5-x) - 14(x+5) = -6(x+2)$$

$$\underline{20x - 12} + \underline{35 - 7x} - \underline{14x - 70} = \underline{-6x - 12}$$

$$-x - 47 = -6x - 12 \quad | +6x$$

$$5x - 47 = -12 \quad | +47$$

$$5x = 35 \quad | :5$$

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

SK

$$\checkmark L = \frac{5x-3}{7} + \frac{5-x}{4} - \frac{1}{2}(x+5) =$$

$$= \frac{5 \cdot \cancel{7} - 3}{\cancel{7}} + \frac{5 - \cancel{4}}{\cancel{4}} - \frac{1}{2}(\cancel{7} + 5) =$$

$$= \frac{35-3}{7} + \frac{-2}{4} - \frac{1}{2} \cdot 12 = \frac{32}{7} - \frac{1}{2} - \frac{12}{2} =$$

$$= \frac{64}{14} - \frac{7}{14} - \frac{84}{14} = \frac{64}{14} - \frac{91}{14} = -\frac{27}{14} \checkmark$$

$$P = -\frac{3(x+2)}{14} = -\frac{3(\cancel{7}+2)}{14} = -\frac{3 \cdot 9}{14} = -\frac{27}{14} \checkmark$$

$$\checkmark L = P$$

$$\frac{7x-10}{2} - \frac{15}{4}x - \frac{3(2x-4)}{8} = \frac{9x+12}{16} - 3 \quad | \cdot 16$$

$$\overset{\textcircled{3}}{16} \cdot \frac{(7x-10)}{\overset{\textcircled{1}}{2}} - \overset{\textcircled{4}}{16} \cdot \frac{15x}{\overset{\textcircled{4}}{4}} - \overset{\textcircled{2}}{16} \cdot \frac{3(2x-4)}{\overset{\textcircled{1}}{8}} = \overset{\textcircled{1}}{16} \cdot \frac{(9x+12)}{\overset{\textcircled{1}}{16}} - 16 \cdot 3$$

$$8(7x-10) - 60x - 6(2x-4) = 9x+12-48$$

$$56x - 80 - 60x - 12x + 24 = 9x + 12 - 48$$

$$-16x - 56 = 9x - 36 \quad | -9x$$

$$-25x - 56 = -36 \quad | +56$$

$$-25x = 20 \quad | : (-25)$$

$$x = -\frac{20}{25}$$

substitution 

$$L = \frac{7x-10}{2} - \frac{15}{4}x - \frac{3(2x-4)}{8} =$$

$$= \frac{7 \cdot (-\frac{4}{5}) - 10}{2} - \frac{15 \cdot (-\frac{4}{5})}{4} - \frac{3(2 \cdot (-\frac{4}{5}) - 4)}{8} =$$

$$= \frac{-\frac{28}{5} - \frac{50}{5}}{2} + 3 - \frac{3 \left(-\frac{8}{5} - \frac{20}{5} \right)}{8} =$$

$$= -\frac{78}{5} + 3 - \frac{3 \cdot \left(-\frac{28}{5} \right)}{8} =$$

$$= -\frac{78}{10} + 3 + \frac{84}{8} = -\frac{78}{10} + 3 + \frac{84}{40} =$$

$$= -\frac{78}{10} + \frac{30}{10} + \frac{21}{10} = -\frac{78}{10} + \frac{51}{10} = -\frac{27}{10} \checkmark$$

$$P = \frac{9x+12}{16} - 3 = 9 \cdot \left(-\frac{4}{5}\right) + 12$$

$$= -\frac{36}{5} + \frac{60}{5} - 3 = +\frac{24}{5} - 3 =$$

$$= +\frac{24}{80} - 3 = +\frac{3}{10} - \frac{30}{10} = -\frac{27}{10} \checkmark$$

$$\bar{L} = P$$

$$\frac{7x-5}{6} - \frac{5x+3}{7} = \frac{2x-7}{3} \cdot /42$$

$$\textcircled{4} \quad \cancel{42} \cdot \frac{(7x-5)}{\cancel{6} \textcircled{1}} - \cancel{42} \cdot \frac{(5x+3)}{\cancel{7} \textcircled{1}} = \cancel{42} \cdot \frac{(2x-7)}{\cancel{3} \textcircled{1}} \quad \text{14}$$

$$7(7x-5) - 6(5x+3) = 14(2x-7)$$

$$\underline{49x - 35} - \underline{30x - 18} = \underline{28x - 98} \quad /28x$$

$$19x - 53 = 28x - 98$$

$$-9x - 53 = -98 \quad /+53$$

$$-9x = -45 \quad /:(-9)$$

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

$$\overset{sk}{L} = \frac{7x-5}{6} - \frac{5x+3}{7} = \frac{7 \cdot 5 - 5}{6} - \frac{5 \cdot 5 + 3}{7} =$$

$$= \frac{30}{6} - \frac{28}{7} = 5 - 4 = 1 \quad \checkmark$$

$$P = \frac{2x-7}{3} = \frac{2 \cdot 5 - 7}{3} = \frac{10 - 7}{3} = \frac{3}{3} = 1 \quad \checkmark$$

$$L = P$$

$$4 \frac{(23-2x)}{5} - 5 \frac{(11x+1)}{9} = \frac{2(5x-2)}{9} - 14 \quad / \cdot 45 \quad (59)$$

$$\overset{(9)}{45} \cdot 4 \frac{(23-2x)}{\underset{(1)}{5}} - \overset{(5)}{45} \cdot 5 \frac{(11x+1)}{\underset{(1)}{9}} = \overset{(5)}{45} \cdot \frac{2(5x-2)}{\underset{(1)}{9}} - 45 \cdot 14$$

$$36(23-2x) - 25(11x+1) = 10(5x-2) - 765$$

$$\underline{828} - 72x - \underline{275x} - \underline{25} = \underline{50x} - \underline{20} - \underline{765}$$

$$-347x + 803 = 50x - 785 \quad / -50x$$

$$-397x - 803 = -785 \quad / +803$$

$$-397x = -785 - 803$$

$$-397x = -1588 \quad / : (-397)$$

$$x = 4$$

sk

$$L = 4 \frac{(23-2x)}{5} - 5 \frac{(11x+1)}{9} =$$

$$= 4 \frac{(23-2 \cdot 4)}{5} - 5 \frac{(11 \cdot 4 + 1)}{9} =$$

$$= 4 \frac{(23-8)}{5} - 5 \frac{(44+1)}{9} = \frac{4 \cdot 15}{5} - \frac{5 \cdot 45}{9} =$$

$$= 12 - 25 = -13 \checkmark$$

$$P = \frac{2(5x-2)}{9} - 14 = \frac{2(5 \cdot 4 - 2)}{9} - 14 =$$

$$= \frac{2(20-2)}{9} - 14 = \frac{2 \cdot 18}{9} - 14 = 4 - 14 = -13 \checkmark$$

$$L = P$$

$$\frac{12x+11}{11} + \frac{3(4-2x)}{22} = \frac{4(3x+1)}{11} + 1 \quad / \cdot 22$$

60

$$\overset{\textcircled{2}}{22} \cdot \frac{(12x+11)}{\overset{\textcircled{1}}{11}} + \overset{\textcircled{1}}{22} \cdot \frac{3(4-2x)}{\overset{\textcircled{1}}{22}} = \overset{\textcircled{2}}{22} \cdot \frac{4(3x+1)}{\overset{\textcircled{1}}{11}} + \overset{\textcircled{2}}{22} \cdot 1$$

$$2(12x+11) + 3(4-2x) = 8(3x+1) + 22$$

$$\underline{24x + 22 + 12 - 6x} = \underline{24x + 8 + 22}$$

$$18x + 34 = 24x + 30 \quad / -24x$$

$$-6x + 34 = 30 \quad / -34$$

$$-6x = -4 \quad | : (-6)$$

$$x = \frac{4}{6}$$

$$x = \underline{\underline{\frac{2}{3}}}$$

SK

$$L = \frac{12x+11}{11} + \frac{3(4-2x)}{22} =$$

$$= \frac{12 \cdot \frac{2}{3} + 11}{11} + \frac{3(4 - 2 \cdot \frac{2}{3})}{22} =$$

$$= \frac{8 + 11}{11} + \frac{3(4 - \frac{4}{3})}{22} =$$

$$= \frac{19}{11} + \frac{3(\frac{12}{3} - \frac{4}{3})}{22} =$$

$$= \frac{19}{11} + \frac{3 \cdot \frac{8}{3}}{22} = \frac{38}{22} + \frac{8}{22} = \frac{46}{22} = \frac{23}{11}$$

$$p = \frac{4(3x+1)}{11} + 1 = \frac{4 \cdot (3 \cdot \frac{2}{3} + 1)}{11} + 1 =$$

$$= \frac{4 \cdot (2+1)}{11} + 1 = \frac{12}{11} + \frac{11}{11} = \frac{23}{11} \checkmark$$

$$\bar{L} = P$$

$$\frac{2}{3}\left(x + \frac{1}{4}\right) - \frac{3}{2}\left(x - \frac{1}{2}\right) + \frac{4}{3}\left(2 + \frac{9}{4}x\right) = \frac{3}{4}(x+1)$$

61

$$\frac{2x}{3} + \frac{2}{12} - \frac{3x}{2} + \frac{3}{4} + \frac{8}{3} + \frac{36}{12}x = \frac{3}{4}x + \frac{3}{4} \quad / \cdot 12$$

$$\textcircled{4} \cdot \frac{2x}{3} + \textcircled{1} \cdot \frac{2}{12} - \textcircled{6} \cdot \frac{3x}{2} + \textcircled{3} \cdot \frac{3}{4} + \textcircled{4} \cdot \frac{8}{3} + \textcircled{1} \cdot \frac{36}{12}x = \textcircled{3} \cdot \frac{3}{4}x + \textcircled{3} \cdot \frac{3}{4}$$

$$8x + 2 - 18x + 9 + 32 + 36x = 9x + 9$$

$$26x + 43 = 9x + 9 \quad / -9x$$

$$17x + 43 = 9 \quad / -43$$

$$17x = -34 \quad / : 17$$

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

Sk.

$$L = \frac{2}{3}\left(x + \frac{1}{4}\right) - \frac{3}{2}\left(x - \frac{1}{2}\right) + \frac{4}{3}\left(2 + \frac{9}{4}x\right) =$$

$$= \frac{2}{3}\left(-2 + \frac{1}{4}\right) - \frac{3}{2}\left(-2 - \frac{1}{2}\right) + \frac{4}{3}\left(2 + \frac{9}{4}(-2)\right) =$$

$$= \frac{2}{3}\left(-\frac{8}{4} + \frac{1}{4}\right) - \frac{3}{2}\left(-\frac{4}{2} - \frac{1}{2}\right) + \frac{4}{3}\left(2 - \frac{18}{4}\right) =$$

$$= \frac{2}{3}\left(-\frac{7}{4}\right) - \frac{3}{2}\left(-\frac{5}{2}\right) + \frac{4}{3}\left(-\frac{10}{4}\right) = -\frac{14}{12} + \frac{15}{4} - \frac{40}{12} =$$

$$= -\frac{54}{12} + \frac{45}{12} = -\frac{9}{12} = -\frac{3}{4} \quad \checkmark$$

$$P = \frac{3}{4}(x+1) = \frac{3}{4}(-2+1) = \frac{3}{4}(-1) = -\frac{3}{4} \quad \checkmark$$

$$L = P$$

$$\frac{2(3-2x)}{3} + \frac{1}{3} \left(4 - \frac{1}{2}x\right) = \frac{3(2-x)}{2} + \frac{5}{2} \left(\frac{4}{5} + \frac{2}{3}x\right)$$

62

$$\frac{2(3-2x)}{3} + \frac{4}{3} - \frac{1}{6}x = \frac{3(2-x)}{2} + \frac{20}{10} + \frac{10}{6}x$$

$$\frac{2(3-2x)}{3} + \frac{4}{3} - \frac{1}{6}x = \frac{3(2-x)}{2} + 2 + \frac{5}{3}x \quad / \cdot 6$$

$$\textcircled{2} \quad \cancel{6} \cdot \frac{2(3-2x)}{\cancel{3}} + \textcircled{2} \cdot \frac{4}{\cancel{3}} - \textcircled{1} \cdot \frac{1}{\cancel{6}}x = \textcircled{3} \cdot \frac{3(2-x)}{\cancel{2}} + \textcircled{2} \cdot 2 + \textcircled{2} \cdot \frac{5}{\cancel{3}}x$$

$$4(3-2x) + 8 - x = 9(2-x) + 12 + 10x$$

$$12 - 8x + 8 - x = 18 - 9x + 12 + 10x$$

$$-9x + 20 = x + 30 \quad / -x$$

$$-10x + 20 = 30 \quad / -20$$

$$-10x = 10 \quad / : (-10)$$

$$x = -1$$

sk.

$$L = \frac{2(3-2x)}{3} + \frac{1}{3} \left(4 - \frac{1}{2}x\right) = \frac{2(3 - \frac{1}{2}(-1))}{3} + \frac{1}{3} \left(4 - \frac{1}{2}(-1)\right) =$$

$$= \frac{2(3+2)}{3} + \frac{1}{3} \left(4 + \frac{1}{2}\right) = \frac{2 \cdot 5}{3} + \frac{1}{3} \cdot \frac{9}{2} = \frac{10}{3} + \frac{9}{6} =$$

$$= \frac{20}{6} + \frac{9}{6} = \frac{29}{6} \quad \checkmark$$

$$P = \frac{3(2-x)}{2} + \frac{5}{2} \left(\frac{4}{5} + \frac{2}{3}x\right) = \frac{3(2 - (-1))}{2} + \frac{5}{2} \left(\frac{4}{5} + \frac{2}{3}(-1)\right) =$$

$$= \frac{3 \cdot (2+1)}{2} + \frac{5}{2} \left(\frac{4}{5} - \frac{2}{3}\right) = \frac{9}{2} + \frac{5}{2} \cdot \left(\frac{12-10}{15}\right) = \frac{9}{2} + \frac{5}{2} \cdot \frac{2}{15} =$$

$$= \frac{9}{2} + \frac{10}{30} = \frac{9}{2} + \frac{1}{3} = \frac{27+2}{6} = \frac{29}{6} \quad \checkmark$$

$$L = P$$

$$\frac{3}{5} \left(\frac{2}{3}x - \frac{10}{3} \right) - \frac{6x-4}{7} + \frac{2(x-1)+4}{5} + \frac{4}{7} = 0$$

63

$$\frac{6}{15}x - \frac{30}{15} - \frac{6x-4}{7} + \frac{2(x-1)+4}{5} + \frac{4}{7} = 0$$

$$\frac{2}{5}x - 2 - \frac{6x-4}{7} + \frac{2(x-1)+4}{5} + \frac{4}{7} = 0 \quad / \cdot 35$$

$$\textcircled{7} \cdot 35 \cdot \frac{2}{5}x - 2 \cdot 35 - \textcircled{5} \cdot \frac{6x-4}{7} + \textcircled{7} \cdot \frac{2(x-1)+4}{5} + \textcircled{5} \cdot \frac{4}{7} = 0$$

$$14x - 70 - 5(6x-4) + 14(x-1) + 28 + 20 = 0$$

$$14x - 70 - 30x + 20 + 14x - 14 + 28 + 20 = 0$$

$$\begin{aligned} -2x - 16 &= 0 \quad / +16 \\ -2x &= 16 \quad / : (-2) \\ \underline{\underline{x &= -8}} \end{aligned}$$

sk.

$$L = \frac{3}{5} \left(\frac{2}{3}x - \frac{10}{3} \right) - \frac{6x-4}{7} + \frac{2(x-1)+4}{5} + \frac{4}{7} =$$

$$= \frac{3}{5} \left(\frac{2}{3}(-8) - \frac{10}{3} \right) - \frac{6(-8)-4}{7} + \frac{2(-8-1)+4}{5} + \frac{4}{7} =$$

$$= \frac{3}{5} \left(-\frac{16}{3} - \frac{10}{3} \right) - \frac{-48-4}{7} + \frac{2(-9)+4}{5} + \frac{4}{7} =$$

$$= \frac{3}{5} \cdot \left(-\frac{26}{3} \right) - \frac{-52}{7} + \frac{-18+4}{5} + \frac{4}{7} =$$

$$= -\frac{26}{5} + \frac{52}{7} - \frac{14}{5} + \frac{4}{7} = -\frac{40}{5} + \frac{56}{7} =$$

$$= -8 + 8 = 0 \quad \checkmark$$

$$P = 0 \quad \checkmark$$

$$L = P$$

$$\frac{5}{4} \left(\frac{16}{15}x - \frac{2}{5} \right) - \frac{x-5}{3} = \frac{1}{3} \left(\frac{5}{2} + \frac{9}{2}x \right) - \frac{x+8}{15}$$

64

$$\frac{5 \cdot 16}{4 \cdot 15}x - \frac{5 \cdot 2}{4 \cdot 5} - \frac{x-5}{3} = \frac{5}{6} + \frac{9}{6}x - \frac{x+8}{15}$$

$$\frac{4}{3}x - \frac{1}{2} - \frac{x-5}{3} = \frac{5}{6} + \frac{3}{2}x - \frac{x+8}{15} \quad | \cdot 30$$

$$\overset{(10)}{\cancel{30}} \frac{4}{3}x - \overset{(15)}{\cancel{30}} \cdot \frac{1}{2} - \overset{(10)}{\cancel{30}} \frac{(x-5)}{3} = \overset{(5)}{\cancel{30}} \cdot \frac{5}{6} + \overset{(15)}{\cancel{30}} \cdot \frac{3}{2}x - \overset{(2)}{\cancel{30}} \cdot \frac{(x+8)}{15}$$

$$40x - 15 - 10(x-5) = 25 + 45x - 2(x+8)$$

$$40x - 15 - \underline{10x} + 50 = 25 + \underline{45x} - \underline{2x} - 16$$

$$30x + 35 = 43x + 9 \quad | -43x$$

$$-13x + 35 = 9 \quad | -35$$

$$-13x = -26 \quad | : (-13)$$

SK.

$$\tilde{L} = \frac{5}{4} \left(\frac{16}{15}x - \frac{2}{5} \right) - \frac{x-5}{3} \quad \underline{x=2}$$

$$= \frac{5}{4} \left(\frac{16}{15} \cdot 2 - \frac{2}{5} \right) - \frac{2-5}{3} = \frac{5}{4} \left(\frac{32}{15} - \frac{6}{15} \right) - \frac{-3}{3} =$$

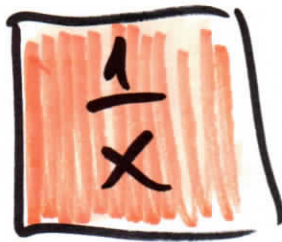
$$= \frac{5}{4} \left(\frac{26}{15} + 1 \right) = \frac{13}{6} + \frac{6}{6} = \frac{19}{6} \checkmark$$

$$P = \frac{1}{3} \left(\frac{5}{2} + \frac{9}{2}x \right) - \frac{x+8}{15} = \frac{1}{3} \left(\frac{5}{2} + \frac{9}{2} \cdot 2 \right) - \frac{2+8}{15} =$$

$$= \frac{1}{3} \left(\frac{5}{2} + \frac{18}{2} \right) - \frac{10}{15} = \frac{1}{3} \cdot \frac{23}{2} - \frac{2}{3} = \frac{23}{6} - \frac{4}{6} =$$

$$= \frac{19}{6} \checkmark$$

$$\tilde{L} = P$$


$$\frac{1}{x}$$

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$$\frac{x+2}{2(x-1)} - \frac{2x}{3(x-1)} = \frac{1}{24} \quad | \cdot 24(x-1)$$

$$\frac{1}{x}$$

1

$$\textcircled{12} \quad 24(x-1) \cdot \frac{x+2}{2(x-1)} - \textcircled{8} \quad 24(x-1) \cdot \frac{2x}{3(x-1)} = 24(x-1) \cdot \frac{1}{24}$$

$$12(x+2) - 8 \cdot 2x = (x-1) \cdot 1$$

$$12x + 24 - 16x = x - 1$$

$$-4x + 24 = x - 1 \quad | -x$$

$$-5x + 24 = -1 \quad | -24$$

$$-5x = -25 \quad | : (-5)$$

$$x = 5$$

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

SK.

$$L = \frac{x+2}{2(x-1)} - \frac{2x}{3(x-1)} = \frac{5+2}{2(5-1)} - \frac{2 \cdot 5}{3(5-1)} =$$

$$= \frac{7}{2 \cdot 4} - \frac{10}{3 \cdot 4} = \frac{7}{8} - \frac{10}{12} = \frac{21-20}{24} = \frac{1}{24} \checkmark$$

$$P = \frac{1}{24}$$

$$L = P$$

PODMIENNY

$$x \neq 1$$

$$\frac{4}{x-3} - \frac{3}{x-2} = \frac{1}{x-4} \quad / (x-2)(x-3)(x-4) \quad \boxed{\frac{1}{x}} \quad \textcircled{2}$$

$$(x-2)(x-3)(x-4) \cdot \frac{4}{(x-3)} - (x-2)(x-3)(x-4) \cdot \frac{3}{(x-2)} = (x-2)(x-3)(x-4) \cdot \frac{1}{(x-4)}$$

$$4(x-2)(x-4) - 3(x-3)(x-4) = (x-2)(x-3)$$

$$4(x^2 - 2x - 4x + 8) - 3(x^2 - 3x - 4x + 12) = x^2 - 2x - 3x + 6$$

$$4(x^2 - 6x + 8) - 3(x^2 - 7x + 12) = x^2 - 5x + 6$$

$$4x^2 - 24x + 32 - 3x^2 + 21x - 36 = x^2 - 5x + 6$$

$$x^2 - 3x - 4 = x^2 - 5x + 6 \quad / -x^2$$

$$-3x - 4 = -5x + 6 \quad / +5x$$

$$2x - 4 = 6 \quad / +4$$

$$2x = 10 \quad / :2$$

$$x = 5$$

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

sk

$$\bar{L} = \frac{4}{x-3} - \frac{3}{x-2} = \frac{4}{5-3} - \frac{3}{5-2} = \frac{4}{2} - \frac{3}{3} = 2 - 1 = 1$$

$$P = \frac{1}{x-4} = \frac{1}{5-4} = \frac{1}{1} = 1 \checkmark$$

$$\bar{L} = P$$

PODMĚNY

$$x \neq 2, x \neq 3, x \neq 4$$

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

$$\frac{1}{x}$$

4

$$\frac{x+2}{2(x+1)} - \frac{1}{2} = -\frac{x+4}{4(x+1)} \quad | \cdot 4(x+1)$$

$$\textcircled{2} \quad \cancel{4(x+1)} \frac{x+2}{\cancel{2(x+1)}} - \cancel{4(x+1)} \frac{1}{2} = -\cancel{4(x+1)} \frac{x+4}{\cancel{4(x+1)}}$$

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

$$2x+4 - 2x-2 = -x-4$$

$$2 = -x-4 \quad | +4$$

$$6 = -x \quad | \cdot (-1)$$

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

PODMIENIKY

$$x \neq -1$$

$$L = \frac{x+2}{2x+2} - \frac{1}{2} = \frac{-6+2}{2 \cdot (-6)+2} - \frac{1}{2} =$$

$$= \frac{-4}{-12+2} - \frac{1}{2} = \frac{-4}{-10} - \frac{1}{2} = \frac{2}{5} - \frac{1}{2} =$$

$$= \frac{4-5}{10} = \frac{-1}{10} \quad \checkmark$$

$$P = -\frac{x+4}{4x+4} = -\frac{-6+4}{4 \cdot (-6)+4} = -\frac{-2}{-24+4} =$$

$$= -\frac{-2}{-20} = -\frac{1}{10} \quad \checkmark$$

$$L = P$$

$$\frac{1}{3} - \frac{23-x}{3x} = \frac{7}{12} - \frac{1}{4x} - \frac{7}{x} \quad | \cdot 12x$$



$$\cancel{12x} \frac{1}{3} - \cancel{12x} \frac{(23-x)}{3x} = \cancel{12x} \cdot \frac{7}{12} - \cancel{12x} \cdot \frac{1}{4x} - \cancel{12x} \frac{7}{x}$$

$$4x - 4(23-x) = 7x - 3 - 12 \cdot 7$$

$$4x - 92 + 4x = 7x - 3 - 84$$

$$\underline{8x - 92 = 7x - 87} \quad | -7x$$

$$x - 92 = -87 \quad | +92$$

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

PODMIENKY $x \neq 0$

$$L = \frac{1}{3} - \frac{23-x}{3x} = \frac{1}{3} - \frac{23-5}{3 \cdot 5} = \frac{1}{3} - \frac{18}{15} =$$

$$= \frac{5}{15} - \frac{18}{15} = -\frac{13}{15} \checkmark$$

$$P = \frac{7}{12} - \frac{1}{4x} - \frac{7}{x} = \frac{7}{12} - \frac{1}{4 \cdot 5} - \frac{7}{5} =$$

$$= -\frac{1}{20} + \frac{7}{12} - \frac{7}{5} = \frac{-3 + 35 - 84}{60} = \frac{-87 + 35}{60} =$$

$$= -\frac{52}{60} = -\frac{13}{15} \checkmark$$

$$L = P$$

$$\frac{1+x}{x-1} - \frac{3+x}{x+1} = \frac{4}{x+1} \quad / (x-1)(x+1)$$



$$\cancel{(x-1)}(x+1) \frac{(1+x)}{\cancel{(x-1)}} - \cancel{(x-1)}(x+1) \frac{(3+x)}{\cancel{(x+1)}} = \cancel{(x-1)}(x+1) \frac{4}{\cancel{(x+1)}}$$

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

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

$$\underline{x^2 + 2x + 1} - \underline{3x - x^2 + 3 + x} = \underline{4x - 4}$$

$$4 = 4x - 4 \quad | +4$$

$$8 = 4x \quad | :4$$

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

PODMIENIKY

$$x \neq \pm 1$$

SK

$$L = \frac{1+x}{x-1} - \frac{3+x}{x+1} = \frac{1+2}{2-1} - \frac{3+2}{2+1} =$$

$$= \frac{3}{1} - \frac{5}{3} = 3 - 1\frac{2}{3} = 1\frac{1}{3} \quad \checkmark$$

$$P = \frac{4}{x+1} = \frac{4}{2+1} = \frac{4}{3} = 1\frac{1}{3} \quad \checkmark$$

$$\checkmark = P$$

$$\frac{1}{x-3} + \frac{2}{x-4} = \frac{5}{(x-3)(x-4)}$$



$$\cancel{(x-3)}(x-4) \cdot \frac{1}{\cancel{x-3}} + \cancel{(x-3)}(x-4) \cdot \frac{2}{\cancel{(x-4)}} = \cancel{(x-3)}(x-4) \cdot \frac{5}{\cancel{(x-3)}(x-4)}$$

$$\begin{aligned}(x-4) + 2(x-3) &= 5 \\ x-4 + 2x-6 &= 5 \\ 3x-10 &= 5 \quad | +10 \\ 3x &= 15 \quad | :3 \\ \underline{x} &= \underline{5}\end{aligned}$$

$$\begin{aligned}L &= \frac{1}{x-3} + \frac{2}{x-4} = \frac{1}{5-3} + \frac{2}{5-4} = \\ &= \frac{1}{2} + \frac{2}{1} = 2\frac{1}{2} \quad \checkmark\end{aligned}$$

$$P = \frac{5}{(x-3)(x-4)} = \frac{5}{(5-3)(5-4)} = \frac{5}{2 \cdot 1} = \frac{5}{2} = 2\frac{1}{2} \quad \checkmark$$

$$\underline{L = P}$$

PODMIENIKY

$$\begin{aligned}x &\neq 3 \\ x &\neq 4\end{aligned}$$

$$\frac{3x-3}{3x+1} - \frac{x-1}{3x+1} = \frac{1}{4} \quad | \cdot (3x+1)$$



8

$$\cancel{(3x+1)} \cdot \frac{(3x-3)}{\cancel{(3x+1)}} - \cancel{(3x+1)} \cdot \frac{(x-1)}{\cancel{(3x+1)}} = \cancel{(3x+1)} \cdot \frac{1}{4}$$

$$(3x-3) - (x-1) = \frac{3x+1}{4}$$

$$3x - 3 - x + 1 = \frac{3x+1}{4}$$

$$2x - 2 = \frac{3x+1}{4} \quad | \cdot 4$$

$$8x - 8 = 3x + 1 \quad | - 3x$$

$$5x - 8 = 1 \quad | + 8$$

$$5x = 9 \quad | : 5$$

$$x = \frac{9}{5}$$

Sk

$$L = \frac{3x-3}{3x+1} - \frac{x-1}{3x+1} = \frac{3 \cdot \frac{9}{5} - 3}{3 \cdot \frac{9}{5} + 1} - \frac{\frac{9}{5} - 1}{3 \cdot \frac{9}{5} + 1} =$$

$$= \frac{\frac{27}{5} - \frac{15}{5}}{\frac{27}{5} + \frac{5}{5}} - \frac{\frac{9}{5} - \frac{5}{5}}{\frac{27}{5} + \frac{5}{5}} = \frac{\frac{12}{5}}{\frac{32}{5}} - \frac{\frac{4}{5}}{\frac{32}{5}} =$$

$$= \frac{60}{160} - \frac{20}{160} = \frac{40}{160} = \frac{1}{4} \quad \checkmark$$

$$P = \frac{1}{4} \quad \checkmark$$

$$L = P$$

$$\frac{x+1}{x-2} - \frac{x-1}{x+2} = 0 \quad / (x-2)(x+2)$$



9

$$\cancel{(x-2)}(x+2) \cdot \frac{(x+1)}{\cancel{(x-2)}} - \cancel{(x-2)}(x+2) \cdot \frac{(x-1)}{\cancel{x+2}} = \cancel{(x-2)}(x+2) \cdot 0$$

$$(x+2)(x+1) - (x-2)(x-1) = 0$$

$$x^2 + 2x + x + 2 - (x^2 - 2x - x + 2) = 0$$

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

$$6x = 0 \quad | :6$$

$$x = 0$$

 ; PODMIENIKY:

$$x \neq \pm 2$$

Sk.

$$\tilde{L} = \frac{x+1}{x-2} - \frac{x-1}{x+2} = \frac{0+1}{0-2} - \frac{0-1}{0+2} =$$

$$= \frac{1}{-2} - \frac{-1}{2} = -\frac{1}{2} + \frac{1}{2} = 0 \quad \checkmark$$

$$P = 0 \quad \checkmark$$

$$\tilde{L} = P$$

$$\frac{1}{x} + \frac{1}{2x} + \frac{1}{3x} = 11 \quad | \cdot 6x$$



$$\cancel{6x} \cdot \frac{1}{x} + \overset{\textcircled{3}}{\cancel{6x}} \cdot \frac{1}{2x} + \overset{\textcircled{2}}{\cancel{6x}} \cdot \frac{1}{3x} = \cancel{6x} \cdot 11$$

$$6 + 3 + \overset{\textcircled{1}}{2} = 66x$$

$$11 = 66x \quad | : 66$$

$$x = \frac{11}{66}$$

$$x = \frac{1}{6}$$

$$\underline{\underline{\frac{1}{6}}}$$

PODMIENIKY: $x \neq 0$

Sk.

$$L = \frac{1}{x} + \frac{1}{2x} + \frac{1}{3x} = \frac{1}{\frac{1}{6}} + \frac{1}{2 \cdot \frac{1}{6}} + \frac{1}{3 \cdot \frac{1}{6}} =$$

$$= \frac{\frac{1}{1}}{\frac{1}{6}} + \frac{\frac{1}{1}}{\frac{2}{6}} + \frac{\frac{1}{1}}{\frac{3}{6}} = \frac{6}{1} + \frac{6}{2} + \frac{6}{3} =$$

$$= 6 + 3 + 2 = 11 \quad \checkmark$$

$$P = 11 \quad \checkmark$$

$$L = P$$

$$\frac{1}{x+6} = \frac{3}{5x-2} \quad | \cdot (x+6) \cdot (5x-2)$$



$$\cancel{(x+6)} \cdot \cancel{(5x-2)} \cdot \frac{1}{\cancel{(x+6)}} = (x+6) \cancel{(5x-2)} \cdot \frac{3}{\cancel{(5x-2)}}$$

$$5x-2 = 3(x+6)$$

$$5x-2 = 3x+18 \quad | -3x$$

$$2x-2 = 18 \quad | +2$$

$$2x = 20 \quad | :2$$

$$x = 10$$

PODMIENKIY: $x \neq -6$
 $x \neq -\frac{2}{5}$

$$\begin{aligned} 5x-2 &= 0 \\ 5x &= 2 \\ x &= \frac{2}{5} \end{aligned}$$

Sk.

$$L = \frac{1}{x+6} = \frac{1}{10+6} = \frac{1}{16} \quad \checkmark$$

$$P = \frac{3}{5x-2} = \frac{3}{5 \cdot 10 - 2} = \frac{3}{50-2} = \frac{3}{48} = \frac{1}{16} \quad \checkmark$$

$$\underline{L=P}$$

$$\frac{x+7}{x-5} + \frac{x+5}{x-4} = 2 \quad / \cdot (x-5)(x-4)$$



$$\cancel{(x-5)}(x-4) \frac{(x+7)}{\cancel{(x-5)}} + \cancel{(x-5)}(x-4) \frac{(x+5)}{\cancel{(x-4)}} = 2 \cdot (x-5)(x-4)$$

$$(x-4)(x+7) + (x-5)(x+5) = 2(x^2 - 7x - 5x + 35)$$

$$x^2 - 49 + x^2 - 25 = 2(x^2 - 12x + 35)$$

$$\cancel{2x^2} - 74 = \cancel{2x^2} - 24x + 70 \quad / -2x^2$$

$$-74 = -24x + 70 \quad / -70$$

$$-144 = -24x \quad / \cdot (-24)$$

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

PODMIENKI: $x \neq 5, x \neq 4$

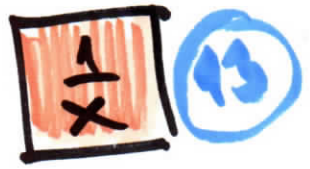
$$\text{SK} \quad \tilde{L} = \frac{x+7}{x-5} + \frac{x+5}{x-4} = \frac{6+7}{6-5} + \frac{6+5}{6-4} =$$

$$= \frac{13}{1} + \frac{11}{-2} = 13 - 11 = 2 \quad \checkmark$$

$$P = 2 \quad \checkmark$$

$$\tilde{L} = P$$

$$\frac{x-2}{x} - \frac{x}{x-2} = \frac{1}{x(x-2)} \quad / \cdot x \cdot (x-2)$$



$$\cancel{x} \cdot (x-2) \cdot \frac{(x-2)}{\cancel{x}} - \frac{x \cdot \cancel{(x-2)} \cdot x}{\cancel{(x-2)}} = \cancel{x} \cdot \cancel{(x-2)} \cdot \frac{1}{\cancel{x(x-2)}}$$

$$(x-2)(x-2) - x^2 = 1$$

$$x^2 - 2x - 2x + 4 - x^2 = 1$$

$$-4x + 4 = 1 \quad | -4$$

$$-4x = -3 \quad | : (-4)$$

$$x = \frac{3}{4}$$

PODHĚNKY:

$$x \neq 0$$

$$x \neq 2$$

$$L = \frac{x-2}{x} - \frac{x}{x-2} = \frac{\frac{3}{4}-2}{\frac{3}{4}} - \frac{\frac{3}{4}}{\frac{3}{4}-2} =$$

$$= \frac{\frac{3}{4} - \frac{8}{4}}{\frac{3}{4}} - \frac{\frac{3}{4}}{\frac{3}{4} - \frac{8}{4}} = \frac{-\frac{5}{4}}{\frac{3}{4}} - \frac{\frac{3}{4}}{-\frac{5}{4}} =$$

$$= -\frac{20}{12} + \frac{12}{20} = -\frac{10}{6} + \frac{6}{10} = \frac{-50+18}{30} =$$

$$= -\frac{32}{30} = -\frac{16}{15} \quad \checkmark$$

$$P = \frac{1}{x(x-2)} = \frac{1}{\frac{3}{4} \cdot (\frac{3}{4}-2)} = \frac{1}{\frac{3}{4} \cdot (-\frac{5}{4})} = -\frac{1}{\frac{15}{16}} = -\frac{16}{15} \quad \checkmark$$

$$L = P$$

$$\frac{7}{x} + 1\frac{1}{2} = \frac{4}{x} + 1\frac{2}{3}$$



$$\frac{7}{x} + \frac{3}{2} = \frac{4}{x} + \frac{5}{3} \quad | \cdot 6x$$

$$\overset{\textcircled{1}}{6x} \cdot \frac{7}{\overset{\textcircled{1}}{x}} + \overset{\textcircled{3x}}{6x} \cdot \frac{3}{2} = \overset{\textcircled{1}}{6x} \cdot \frac{4}{\overset{\textcircled{1}}{x}} + \overset{\textcircled{2x}}{6x} \cdot \frac{5}{3}$$

$$6 \cdot 7 + 3x \cdot 3 = 6 \cdot 4 + 2x \cdot 5$$

$$42 + 9x = 24 + 10x \quad | -9x$$

$$42 = 24 + x \quad | -24$$

$$\underline{\underline{x = 18}}$$

PODMIENKIY : $x \neq 0$

$$\text{Sk: } L = \frac{7}{x} + 1\frac{1}{2} = \frac{7}{18} + 1\frac{1}{2} =$$

$$= \frac{7}{18} + \frac{3}{2} = \frac{7}{18} + \frac{24}{18} = \frac{31}{18} = \frac{17}{9} \checkmark$$

$$P = \frac{4}{x} + 1\frac{2}{3} = \frac{4}{18} + \frac{5}{3} = \frac{4}{18} + \frac{30}{18} = \frac{34}{18} =$$

$$= \frac{17}{9} \checkmark$$

$$L = P$$

$$\frac{4}{x+1} - 4 = \frac{12-7x}{x-1} / (x+1)(x-1)$$



$$\cancel{(x+1)}\cancel{(x-1)} \cdot \frac{4}{\cancel{x+1}} - 4 \cdot \cancel{(x+1)}\cancel{(x-1)} = \cancel{(x+1)}\cancel{(x-1)} \frac{(12-7x)}{\cancel{(x-1)}}$$

$$4(x-1) - 4(x^2-1) = (x+1)(12-7x)$$

$$4x - 4 - 4x^2 + 4 = 12x - 7x^2 + 12 - 7x$$

$$-7x^2 + 4x + 3 = -7x^2 + 5x + 12 \quad / +7x^2$$

$$4x - 3 = 5x + 12 \quad / -4x$$

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

$$x = -9$$

PODMIENIKY $x \neq \pm 1$

SK.

$$L = \frac{4}{x+1} - 4 = \frac{4}{-9+1} - 4 = \frac{4}{-8} - 4 = -\frac{1}{2} - 4 = -4\frac{1}{2} \checkmark$$

$$P = \frac{12-7x}{x-1} = \frac{12-7 \cdot (-9)}{-9-1} = \frac{12+63}{-10} =$$

$$= \frac{75}{-10} = -\frac{75}{10} = -7\frac{5}{10} = -7\frac{1}{2} \checkmark$$

$$L = P$$

$$\frac{2x+5}{6} + \frac{10}{x-3} = \frac{2x-3}{6} \quad | \cdot 6 \cdot (x-3)$$



$$\cancel{6} \cdot (x-3) \frac{(2x+5)}{\cancel{6}} + \cancel{6} \cdot \cancel{(x-3)} \cdot \frac{10}{\cancel{(x-3)}} = \cancel{6} \cdot (x-3) \frac{(2x-3)}{\cancel{6}}$$

$$(x-3)(2x+5) + 6 \cdot 10 = (x-3)(2x-3)$$

$$2x^2 + 5x - 6x - 15 + 60 = 2x^2 - 3x - 6x + 9$$

$$2x^2 - x + 45 = 2x^2 - 9x + 9 \quad | -2x^2$$

$$-x + 45 = -9x + 9 \quad | +9x$$

$$8x + 45 = 9 \quad | -45$$

$$8x = -36 \quad | : 8$$

$$x = -\frac{36}{8} = -\frac{9}{2}$$

PODMENKY

$$x \neq 3$$

SK

$$L = \frac{2x+5}{6} + \frac{10}{x-3} = \frac{2 \cdot \left(-\frac{9}{2}\right) + 5}{6} + \frac{10}{-\frac{9}{2} - 3} =$$

$$= \frac{-9+5}{6} + \frac{10}{-\frac{9}{2} - \frac{6}{2}} = \frac{-4}{6} + \frac{10}{-\frac{15}{2}} =$$

$$= -\frac{2}{3} - \frac{\frac{10}{15}}{\frac{1}{2}} = -\frac{2}{3} - \frac{20}{15} = -\frac{2}{3} - \frac{4}{3} = -\frac{6}{3} = -2 \checkmark$$

$$P = \frac{2x-3}{6} = \frac{2 \cdot \left(-\frac{9}{2}\right) - 3}{6} = \frac{-9-3}{6} =$$

$$= -\frac{12}{6} = -2 \checkmark$$

$$L = P$$

$$\frac{x+3}{4} - \frac{3}{x+3} = \frac{2x-3}{8} \quad | \cdot 8(x+3)$$



$$\textcircled{2} \quad \cancel{8(x+3)} \left(\frac{x+3}{4} - \cancel{8 \cdot (x+3)} \right) \frac{3}{\cancel{(x+3)}} = \cancel{8 \cdot (x+3)} \cdot \frac{(2x-3)}{\cancel{8}}$$

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

$$2(x^2 + 3x + 3x + 9) - 24 = 2x^2 - 3x + 6x - 9$$

$$2x^2 + 6x + 6x + 18 - 24 = 2x^2 + 3x - 9$$

$$2x^2 + 12x - 6 = 2x^2 + 3x - 9 \quad | -2x^2$$

$$12x - 6 = 3x - 9 \quad | -3x$$

$$9x - 6 = -9 \quad | +6$$

$$9x = -3 \quad | :9$$

$$x = -\frac{1}{3}$$

PODNIKAWY
 $x \neq -3$

$$\text{SK } L = \frac{x+3}{4} - \frac{3}{x+3} = \frac{-\frac{1}{3} + \frac{9}{3}}{4} - \frac{3}{-\frac{1}{3} + \frac{9}{3}} =$$

$$= \frac{\frac{8}{3}}{\frac{4}{1}} - \frac{\frac{3}{1}}{\frac{8}{3}} = \frac{8}{12} - \frac{9}{8} = \frac{16}{24} - \frac{27}{24} =$$

$$= -\frac{11}{24} \quad \checkmark$$

$$P = \frac{2x-3}{8} = \frac{2 \cdot (-\frac{1}{3}) - \frac{9}{3}}{8} = \frac{-\frac{2}{3} - \frac{9}{3}}{8} =$$

$$= -\frac{\frac{11}{3}}{\frac{8}{1}} = -\frac{11}{24} \quad \checkmark \quad L = P$$

$$\frac{3}{(x-4)(x+1)} = \frac{4}{(x-5)(x+1)} \quad / (x-5)(x-4)(x+1)$$



18

$$(x-5)(x-4)(x+1) \cdot \frac{3}{(x-4)(x+1)} = (x-5)(x-4)(x+1) \frac{4}{(x-5)(x+1)}$$

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

$$3x - 15 = 4x - 16 \quad / -4x$$

$$-x - 15 = -16 \quad / +15$$

$$-x = -1 \quad | :(-1)$$

$$\underline{\underline{x = 1}}$$

SK.

$$L = \frac{3}{(x-4)(x+1)} = \frac{3}{(1-4)(1+1)} = \frac{3}{-3 \cdot 2} =$$

$$= -\frac{1}{2} \checkmark$$

$$P = \frac{4}{(x-5)(x+1)} = \frac{4}{(1-5)(1+1)} = \frac{4}{-4 \cdot 2} = -\frac{1}{2} \checkmark$$

$$L = P$$

PODHLENY
 $x \neq 5$
 $x \neq 4$
 $x \neq -1$

$$\frac{x+7}{x-2} - \frac{x-2}{x+2} = -\frac{3}{x^2-4} \quad | \cdot (x^2-4) \quad \boxed{\frac{1}{x}} \quad \textcircled{19}$$

$$\cancel{(x+2)} \cdot \frac{(x+4)}{\cancel{x-2}} - \cancel{(x^2-4)} \cdot \frac{(x-2)}{\cancel{(x+2)}} = -\cancel{(x^2-4)} \cdot \frac{3}{\cancel{(x^2-4)}}$$

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

$$x^2 + 4x + 2x + 14 - (x^2 - 4x + 4) = -3$$

$$x^2 + 4x + 2x + 14 - x^2 + 4x - 4 = -3$$

$$13x + 10 = -3 \quad | -10$$

$$13x = -13 \quad | :13$$

$$x = -1$$

SK.

$$L = \frac{x+4}{x-2} - \frac{x-2}{x+2} = \frac{-1+4}{-1-2} - \frac{-1-2}{-1+2} =$$

$$= \frac{6}{-3} - \frac{-3}{1} = -2 + 3 = 1 \quad \checkmark$$

$$P = -\frac{3}{x^2-4} = -\frac{3}{(-1)^2-4} = -\frac{3}{1-4} = -\frac{3}{-3} = 1 \quad \checkmark$$

$$\underline{\underline{L=P}}$$

PODMIENKY

$$x \neq 2$$

$$x \neq -2$$

$$\frac{x+1}{2x-3} - \frac{7}{4x^2-9} = -\frac{4-x}{2x+3} \quad / \cdot (4x^2-9)$$

$$\frac{1}{x}$$

20

$$\frac{(4x^2-9)}{(2x+3)} \frac{(x+1)}{2x-3} - \frac{(4x^2-9)}{4x^2-9} \cdot 7 = - \frac{(4x^2-9)}{(2x+3)} \frac{(4-x)}{(2x-3)}$$

$$(2x+3)(x+1) - 7 = - (2x-3)(4-x)$$

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

$$2x^2 + 5x - 4 = -8x + 2x^2 + 12 - 3x$$

$$2x^2 + 5x - 4 = 2x^2 - 11x + 12 \quad / -2x^2$$

$$5x - 4 = -11x + 12 \quad / +11x$$

$$16x - 4 = 12 \quad / +4$$

$$16x = 16 \quad / : 16$$

$$\underline{\underline{x = 1}}$$

sk.

$$L = \frac{x+1}{2x-3} - \frac{7}{4x^2-9} = \frac{1+1}{2 \cdot 1 - 3} - \frac{7}{4(1)^2 - 9} =$$

$$= \frac{2}{2-3} - \frac{7}{4-9} = \frac{2}{-1} - \frac{7}{-5} = -2 + \frac{7}{5} =$$

$$= -\frac{10}{5} + \frac{7}{5} = -\frac{3}{5} \checkmark$$

$$P = -\frac{4-x}{2x+3} = -\frac{4-1}{2 \cdot 1 + 3} = -\frac{3}{2+3} = -\frac{3}{5} \checkmark$$

$$L = P$$

PODMIENKY

$$2x-3=0$$

$$2x=3$$

$$x = \frac{3}{2} \Rightarrow$$

$$x \neq \pm \frac{3}{2}$$