

1) Riješiti sledeće linearne jednačine s jednom nepoznatom u skupu racionalnih brojeva:

$$a) x + \frac{5}{6} = \frac{21}{2}$$

$$\Leftrightarrow x = \frac{21}{2} - \frac{5}{6}$$

$$\Leftrightarrow x = \frac{63-5}{6}$$

$$\Leftrightarrow x = \frac{78}{6}$$

$$\Leftrightarrow x = 13$$

$$b) \frac{3x}{2} - \frac{21}{3} = 3$$

$$\Leftrightarrow \frac{3x}{2} = 3 + \frac{21}{3}$$

$$\Leftrightarrow \frac{3x}{2} = \frac{9+21}{3}$$

$$\Leftrightarrow \frac{3x}{2} = \frac{30}{3}$$

$$\Leftrightarrow \frac{3x}{2} = 10 \quad / \cdot 2$$

$$\Leftrightarrow 3x = 20$$

$$\Leftrightarrow x = \frac{20}{3}$$

$$\Leftrightarrow x = 6 \frac{2}{3}$$

II način. Ovaj postupak možemo primijeniti za svaki ovakav zadatak:  $NZS(2,3)=6$   
Množimo datu jednačinu sa 6. Praktično, svaki sabirak lijeve i desne strane množimo sa 6.

$$\frac{3x}{2} - \frac{21}{3} = 3$$

$$\Leftrightarrow 9x - 42 = 18$$

$$\Leftrightarrow 9x = 18 + 42$$

$$\Leftrightarrow 9x = 60$$

$$\Leftrightarrow x = \frac{60}{9}$$

$$\Leftrightarrow x = 6 \frac{4}{9}$$

$$\Leftrightarrow x = 6 \frac{2}{3}$$

$$c) \frac{x}{4} + \frac{x+1}{2} = -\frac{3}{2} / \cdot 4$$

$$\Leftrightarrow x + 2(x+1) = -6$$

$$\Leftrightarrow x + 2x + 2 = -6$$

$$\Leftrightarrow 3x + 2 = -6$$

$$\Leftrightarrow 3x = -6 - 2$$

$$\Leftrightarrow 3x = -8$$

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

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

$$d) \frac{3x}{4} + 1 = \frac{2x}{3} + \frac{21}{2} / \cdot 12$$

$$\Leftrightarrow 9x + 12 = 8x + 126$$

$$\Leftrightarrow 9x - 8x = 126 - 12$$

$$\Leftrightarrow x = 114$$

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

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

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

$$\Leftrightarrow 5 - x = 5x$$

$$\Leftrightarrow -x - 5x = -5$$

$$\Leftrightarrow -6x = -5$$

$$\Leftrightarrow x = \frac{5}{6}$$

$$f) \frac{x-11}{7} + \frac{x}{4} + \frac{x-1}{14} = \frac{3x}{2} / \cdot 28$$

$$\Leftrightarrow 4(x-11) + 7x + 2(x-1) = 42x$$

$$\Leftrightarrow 4x - 44 + 7x + 2x - 2 = 42x$$

$$\Leftrightarrow 13x - 46 = 42x$$

$$\Leftrightarrow 13x - 42x = 46$$

$$\Leftrightarrow -29x = 46$$

$$\Leftrightarrow x = -\frac{46}{29}$$

$$\Leftrightarrow x = -1\frac{17}{29}$$

$$g) 3x - \frac{3}{4} + 2x = 4x + \frac{1}{2} / \cdot 4$$

$$\Leftrightarrow 12x - 3 + 8x = 16x + 2$$

$$\Leftrightarrow 20x - 3 = 16x + 2$$

$$\Leftrightarrow 20x - 16x = 2 + 3$$

$$\Leftrightarrow 4x = 5$$

$$\Leftrightarrow x = \frac{5}{4}$$

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

$$h) 0,4x + 1,12 - 0,5x + \frac{1}{5} = 0,4 / \cdot 5$$

$$\Leftrightarrow 2x + 5,6 - 2,5x + 1 = 2$$

$$\Leftrightarrow 2x - 2,5x = 2 - 1 - 5,6$$

$$\Leftrightarrow -0,5x = -4,6 / \cdot 10$$

$$\Leftrightarrow -5x = -46$$

$$\Leftrightarrow x = \frac{-46}{-5}$$

$$\Leftrightarrow x = 9\frac{1}{5}$$

$$i) \frac{3}{4}x + \frac{11}{12} = \frac{7}{8}x - \frac{5}{6} / \cdot 24$$

$$\Leftrightarrow 18x + 22 = 21x - 20$$

$$\Leftrightarrow 18x - 21x = -20 - 22$$

$$\Leftrightarrow -3x = -42$$

$$\Leftrightarrow x = \frac{-42}{-3}$$

$$\Leftrightarrow x = 14$$

$$j) 7x - 3(2x + 7) = 8 - 2(x + 1)$$

$$\Leftrightarrow 7x - 6x - 21 = 8 - 2x - 2$$

$$\Leftrightarrow x - 21 = 6 - 2x$$

$$\Leftrightarrow x + 2x = 6 + 21$$

$$\Leftrightarrow 3x = 27$$

$$\Leftrightarrow x = \frac{27}{3}$$

$$\Leftrightarrow x = 9$$

$$k) 7 - 4(x - 1) = 2 - 3(5x - 2)$$

$$\Leftrightarrow 7 - 4x + 4 = 2 - 15x + 6$$

$$\Leftrightarrow 11 - 4x = 8 - 15x$$

$$\Leftrightarrow -4x + 15x = 8 - 11$$

$$\Leftrightarrow 11x = -3$$

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

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

$$\Leftrightarrow 6x - 12 - 4x + 12 = 27x - 9 + 5x - 10$$

$$\Leftrightarrow 2x = 32x - 19$$

$$\Leftrightarrow 2x - 32x = -19$$

$$\Leftrightarrow -30x = -19$$

$$\Leftrightarrow x = \frac{19}{30}$$

2) Riješiti sledeće lineame jednačine s jednom nepoznatom u skupu racionalnih brojeva:

Napomena: Jednačina oblika  $x : a = b$  ima za rješenje  $x = a \cdot b$

Jednačina oblika  $a : x = b$  ima za rješenje  $x = a : b$ , gdje su  $(a, b \in \mathfrak{R})$

$$a) x : \left(\frac{-3}{5}\right) = 1\frac{4}{21}$$

$$\Leftrightarrow x : \left(\frac{-3}{5}\right) = \frac{25}{21}$$

$$\Leftrightarrow x = \frac{25}{21} \cdot \left(\frac{-3}{5}\right)$$

$$\Leftrightarrow x = \frac{25 \cdot (-3)}{21 \cdot 5}$$

$$\Leftrightarrow x = \frac{5 \cdot (-1)}{7 \cdot 1}$$

$$\Leftrightarrow x = -\frac{5}{7}$$

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

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

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

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

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