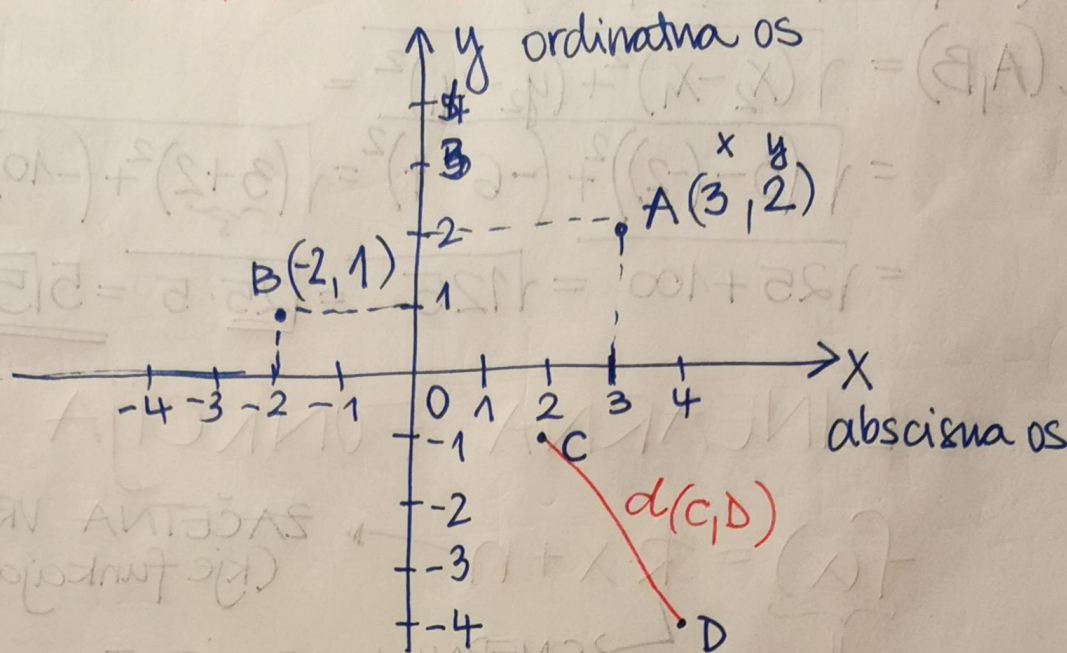


①

PRAVOKOTNI KOORDINATNI SISTEM



Razdalja med dvema točkama

$$d(A, B) = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

Dani sta točki A(-4, 3) in B(2, -1). Zapiši razdaljo točke A do točke B.

$$\begin{aligned} d(A, B) &= \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2} = \\ &= \sqrt{(2 - (-4))^2 + (-1 - 3)^2} = \\ &= \sqrt{(2 + 4)^2 + (-4)^2} = \\ &= \sqrt{36 + 16} = \sqrt{52} \\ &= \sqrt{4 \cdot 13} = \underline{\underline{2\sqrt{13}}} \end{aligned}$$

$$A \begin{matrix} x_1 & y_1 \\ (-4, & 3) \end{matrix}$$

$$B \begin{matrix} x_2 & y_2 \\ (2, & -1) \end{matrix}$$

(2) $(-4) \cdot (-4) = +16$

(3) $(-4) \cdot (-4) = -64$
 $\rightarrow \underline{\text{LiHA}} \rightarrow -$

$(-1)^{100} = 1$
 $(-1)^{103} = -1$

4, 9, 16, 25, 36, 49, 64, 81, 100

$$A(-2, 4), B(3, -6)$$

$$\begin{aligned} d(A, B) &= \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2} = \\ &= \sqrt{(3 - (-2))^2 + (-6 - 4)^2} = \sqrt{(3 + 2)^2 + (-10)^2} = \\ &= \sqrt{25 + 100} = \sqrt{125} = \underline{\underline{25 \cdot 5}} = \underline{\underline{5\sqrt{5}}} \end{aligned}$$

LINEARNA FUNKCIJA

$$f(x) = k \cdot x + n$$

$\underbrace{f(x)}_{y}$ → SMERNI KOEFICIENT
 $k > 0$ narašča
 $k < 0$ padala

$\rightarrow$ ZAČETNA VREDNOST
 (kje funkcija seka y-os)

Dana je premica $y = -x - 2$. Nariši graf in izračunaj presečišči z x in y osjo.

$$y = -x - 2$$

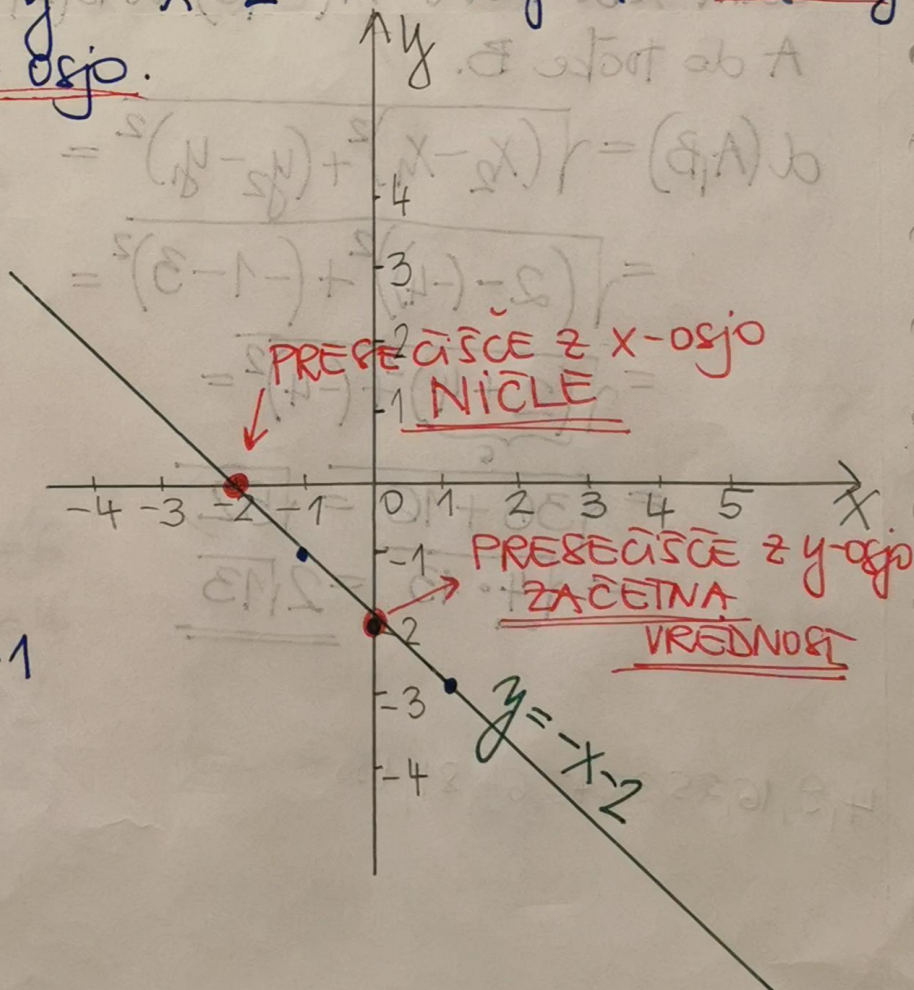
x	y	
-1	-1	$T_1(-1, -1)$
0	-2	$T_2(0, -2)$
1	-3	$T_3(1, -3)$

$$y = -x - 2$$

$$y = -(-1) - 2 = 1 - 2 = -1$$

$$y = -0 - 2 = -2$$

$$y = -1 - 2 = -3$$



2) PRESEČIŠČE z x-osjo = NICLE $\rightarrow$ funkcijo izenačiš z 0!

$$y = -x - 2$$

$$-x - 2 = 0$$

$$-x = 2 \quad /: (-1)$$

$$\boxed{x = -2} \quad 2 : (-1)$$

PRESEČIŠČE z y-osjo = ZAČETNA VREDNOST $\rightarrow$ v funkcijo namesto x vstavi 0.

$$y = -x - 2$$

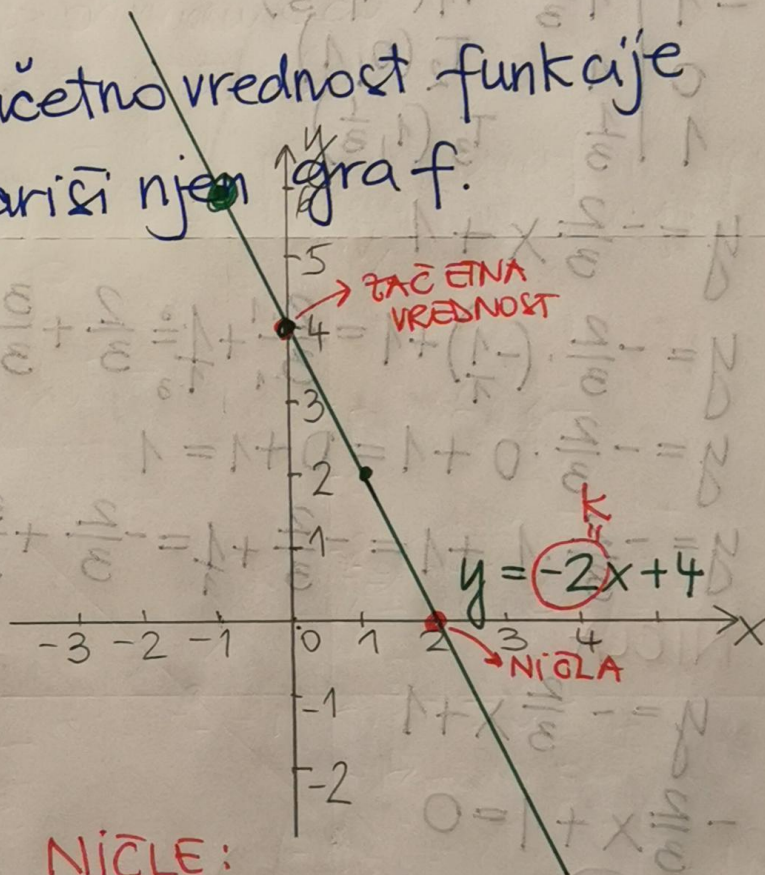
$$y = -0 - 2$$

$$\boxed{y = -2}$$

Izračunajte nicle in začetno vrednost funkcije $f(x) = -2x + 4$ ter nariši njen graf.

$$y = -2x + 4$$

x	y	
-1	6	$T_1(-1, 6)$
0	4	$T_2(0, 4)$
1	2	$T_3(1, 2)$



$$y = -2x + 4$$

$$y = -2 \cdot (-1) + 4 = 2 + 4 = 6$$

$$y = -2 \cdot 0 + 4 = 0 + 4 = 4$$

$$y = -2 \cdot 1 + 4 = -2 + 4 = 2$$

ZAČETNA VREDNOST:

$$y = -2x + 4$$

$$y = -2 \cdot 0 + 4$$

$$\boxed{y = 4}$$

NICLE:

$$y = -2x + 4$$

$$-2x + 4 = 0$$

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

$$\boxed{x = 2}$$

Nariši premico $2x + 3y - 3 = 0$ ter določi njene in začetno vrednost.

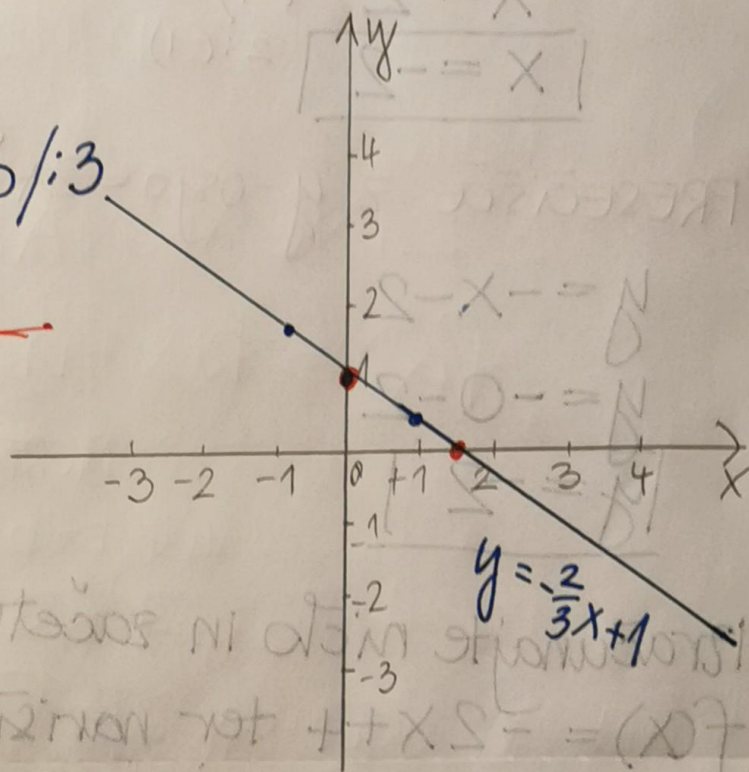
$y = kx + n$ EKSPLICITNA OBLIKA

$ax + by + c = 0$ IMPLICITNA OBLIKA

$2x + 3y - 3 = 0$

$3y = -2x + 3 \quad | :3$

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



x	y	
-1	$\frac{2}{3}$	$T_1(-1, \frac{2}{3})$
0	1	$T_2(0, 1)$
1	$\frac{1}{3}$	$T_3(1, \frac{1}{3})$

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

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

$y = -\frac{2}{3} \cdot 0 + 1 = 0 + 1 = 1$

$y = -\frac{2}{3} \cdot 1 + 1 = -\frac{2}{3} + 1 = -\frac{2}{3} + \frac{3}{3} = \frac{1}{3} = 0,33$

NICLA

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

$-\frac{2}{3}x + 1 = 0$

$-\frac{2}{3}x = -1 \quad | : (-\frac{2}{3})$

$x = 1 : \frac{2}{3}$

$x = \frac{1}{1} \cdot \frac{3}{2}$

$x = \frac{3}{2} = 1\frac{1}{2}$

$3 : 2 = 1$
ost 1

ZAČETNA VREDNOST

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

$y = -\frac{2}{3} \cdot 0 + 1$

$y = 1$

③ Dami sta premici $y=3x$ in $y=-2x+5$. Premici nariši v isti koordinatni sistem in izračunajte njuno presečišče.

$$y=3x$$

x	y
-1	-3
0	0
1	3

$T_1(-1, -3)$
 $T_2(0, 0)$
 $T_3(1, 3)$

$$y=3x$$

$$y=3 \cdot (-1) = -3$$

$$y=3 \cdot 0 = 0$$

$$y=3 \cdot 1 = 3$$

$$y=-2x+5$$

x	y
-1	7
0	5
1	3

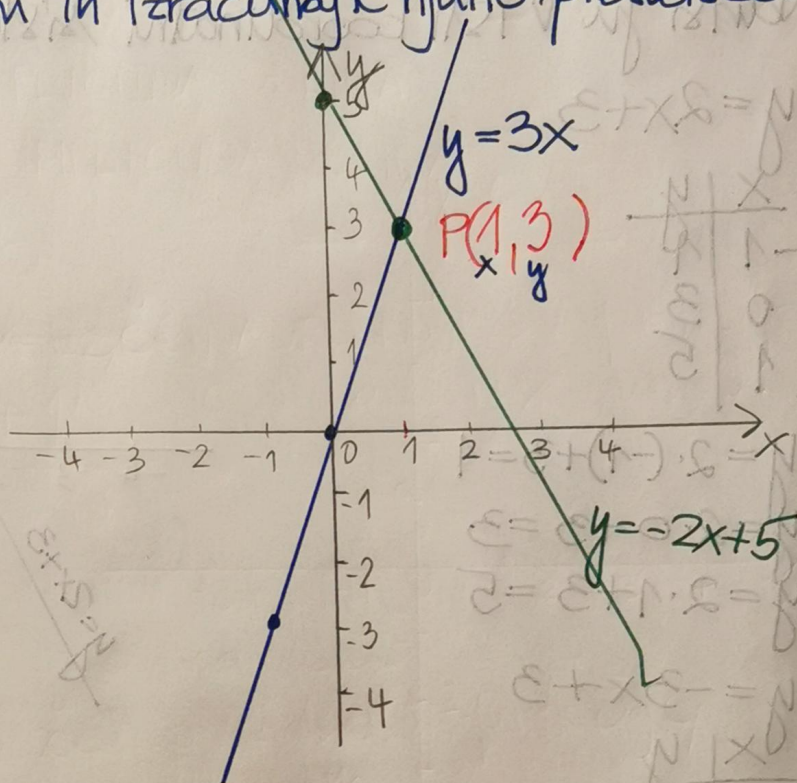
$T_1(-1, 7)$
 $T_2(0, 5)$
 $T_3(1, 3)$

$$y=-2x+5$$

$$y=-2 \cdot (-1) + 5 = 2 + 5 = 7$$

$$y=-2 \cdot 0 + 5 = 5$$

$$y=-2 \cdot 1 + 5 = -2 + 5 = 3$$



PRESEČIŠČE DVEH FUNKCIJ

$$y=3x \quad y=-2x+5$$

$$y=y$$

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

$$3x + 2x = 5$$

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

$$\boxed{x=1}$$

$$P(1, 3)$$

$$y=3x$$

$$y=3 \cdot 1$$

$$\boxed{y=3}$$

$$y=-2 \cdot 1 + 5$$

$$y=-2 + 5$$

$$\underline{y=3}$$

Dani sta funkciji: $f(x) = 2x + 3$ in $g(x) = -3x + 3$.
 Nariši ju v isti koordinatni sistem in izračunaj presečišče.

$$y = 2x + 3$$

x	y
-1	1
0	3
1	5

$$y = 2 \cdot (-1) + 3 = 1$$

$$y = 2 \cdot 0 + 3 = 3$$

$$y = 2 \cdot 1 + 3 = 5$$

$$y = -3x + 3$$

x	y
-1	6
0	3
1	0

$$y = -3 \cdot (-1) + 3 = 6$$

$$y = -3 \cdot 0 + 3 = 3$$

$$y = -3 \cdot 1 + 3 = 0$$

$$\underline{-3 + 3 = 0}$$

PRESEČIŠČE

$$y = 2x + 3 \quad y = -3x + 3$$

$$y = y$$

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

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

$$5x = 0 : 5$$

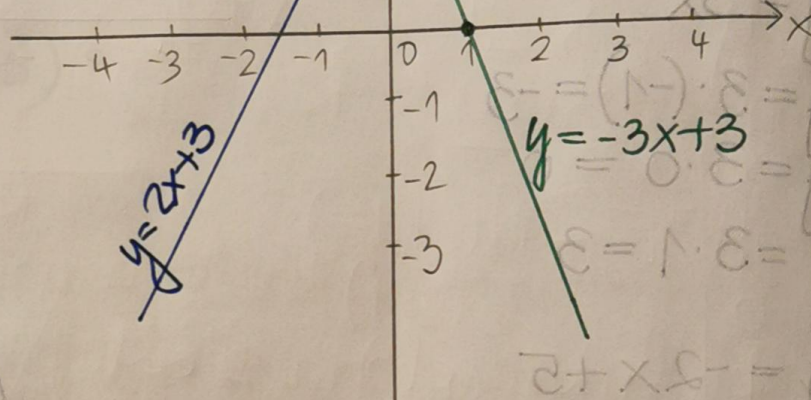
$$\boxed{x = 0}$$

$$P(0, 3)$$

$$y = -3x + 3$$

$$y = -3 \cdot 0 + 3$$

$$\boxed{y = 3}$$



zapiši enačbo premice, ki poteka skozi točki
 $A(3,3)$ in $B(5,4)$.

$$y = kx + n$$

$$k = \frac{y_2 - y_1}{x_2 - x_1}$$

$$k = \frac{4 - 3}{5 - 3} = \frac{1}{2}$$

$$y = \frac{1}{2}x + n \quad A(3,3)$$

$$3 = \frac{1}{2} \cdot 3 + n$$

$$3 = \frac{3}{2} + n$$

$$\frac{3}{1} - \frac{3}{2} = n$$

$$\frac{6}{2} - \frac{3}{2} = n$$

$$\boxed{\frac{3}{2} = n}$$

zapiši enačbo premice, ki je vzporedna premici
 $y = 2x - 1$ in poteka skozi točko $T(0,3)$.

$$y = kx + n$$

$$k = 2$$

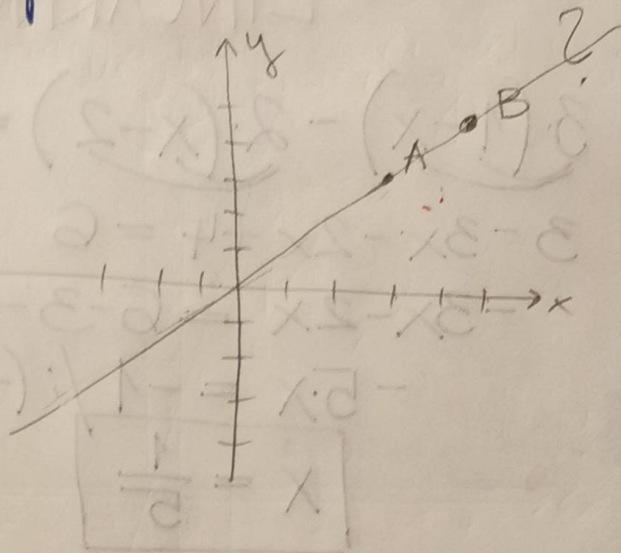
$$y = 2x + n$$

$$3 = 2 \cdot 0 + n$$

$$\boxed{3 = n}$$

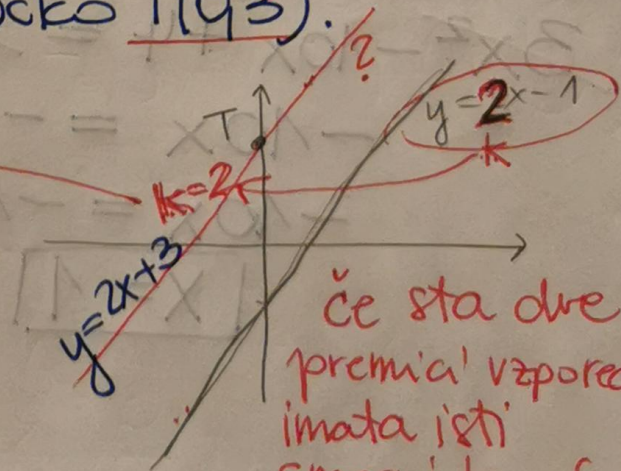
$$y = kx + n$$

$$\boxed{y = 2x + 3}$$



$$y = kx + n$$

$$\boxed{y = \frac{1}{2}x + \frac{3}{2}}$$



če sta dve
 premici vzporedni
 imata isti
 smerni koeficient

LINEARNE ENACIÖNE

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

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

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

$$-5x = -1 \quad / : (-5)$$

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

$$5x - 2 \cdot (x-2) - 4x = 0$$

$$5x - 2x + 4 - 4x = 0$$

$$5x - 2x + 4x = -4$$

$$-1x = -4 \quad / : (-1)$$

$$x = 4$$

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

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

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

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

$$-10x = -6 - 4$$

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

$$x = 1$$

$$(a-b)^2 = a^2 - 2 \cdot a \cdot b + b^2$$

$$\frac{\overset{12}{\cancel{12}}x}{\cancel{3}} - \frac{\overset{12}{\cancel{12}}(2x-1)}{4} = \cancel{12}x - \frac{\overset{12}{\cancel{12}}25}{\cancel{12}} \quad / \cdot 12$$

$$4x - 3 \cdot (2x-1) = 12x - 25$$

$$4x - 6x + 3 = 12x - 25$$

$$4x - 6x - 12x = -25 - 3$$

$$-14x = -28 \quad / : (-14)$$

$$\boxed{x = 2}$$

$$0,75 = \frac{75:25}{100:25} = \frac{3}{4}$$

$$\frac{x+1}{3} - 2 = 0,75 - x$$

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

$$4(x+1) - 24 = 9 - 12x$$

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

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

$$16x = 29 \quad / : 16$$

$$x = \frac{29}{16} = 1 \frac{13}{16}$$