

## Extra oefenopgaven lineaire vergelijkingen

Los op:

$$1) 3x + 7 = x - 2$$

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

$$3) \frac{3x + 5}{7} = 3 + x$$

$$4) \frac{4 - x}{2} + 5 \leq x + 1$$

$$5) -5x + 3 - 2(x + 2) \geq -x + 3$$

$$6) \begin{cases} 3x + y = 13 - x \\ 4y + 3 = 2y + 3x - 4 \end{cases}$$

$$7) \begin{cases} 6 \cdot (3x + y) - 2x = 2x + y \\ 2x + 2 \cdot (x - 4y) + 1 = -2 \cdot (x - y) \end{cases}$$

## Antwoorden

Los op:

1)

$$3x + 7 = x - 2$$

$$2x + 7 = -2$$

$$2x = -9$$

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

2)

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

$$3x - 6 + 7 = 1 - x$$

$$3x + 1 = 1 - x$$

$$4x + 1 = 1$$

$$4x = 0$$

$$x = 0$$

3)

$$\frac{3x + 5}{7} = 3 + x$$

$$7 \cdot \frac{3x + 5}{7} = 7 \cdot (3 + x)$$

$$3x + 5 = 21 + 7x$$

$$-4x + 5 = 21$$

$$-4x = 16$$

$$x = -4$$

4)

$$\frac{4 - x}{2} + 5 \leq x + 1$$

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

$$4 - x + 10 \leq 2x + 2$$

$$14 - x \leq 2x + 2$$

$$14 - 3x \leq 2$$

$$-3x \leq -12$$

$$x \geq 4$$

5)

$$-5x + 3 - 2(x + 2) \geq -x + 3$$

$$-5x + 3 - 2x - 4 \geq -x + 3$$

$$-7x - 1 \geq -x + 3$$

$$-6x - 1 \geq 3$$

$$-6x \geq 4$$

$$x \leq -\frac{2}{3}$$

6)

$$\begin{cases} 3x + y = 13 - x \\ 4y + 3 = 2y + 3x - 4 \end{cases}$$

$$3x + y = 13 - x$$

$$y = 13 - 4x$$

$$4(13 - 4x) + 3 = 2(13 - 4x) + 3x - 4$$

$$52 - 16x + 3 = 26 - 8x + 3x - 4$$

$$-16x + 55 = -5x + 22$$

$$-11x + 55 = 22$$

$$-11x = -33$$

$$x = 3$$

$$3 \cdot 3 + y = 13 - 3$$

$$9 + y = 10$$

$$y = 1$$

7)

$$\begin{cases} 6 \cdot (3x + y) - 2x = 2x + y \\ 2x + 2 \cdot (x - 4y) + 1 = -2 \cdot (x - y) \end{cases}$$

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

$$18x + 6y - 2x = 2x + y$$

$$16x + 6y = 2x + y$$

$$14x = -5y$$

$$x = \left(-\frac{5}{14}y\right)$$

$$2 \cdot \left(-\frac{5}{14}y\right) + 2 \cdot \left(\left(-\frac{5}{14}y\right) - 4y\right) + 1 = -2 \cdot \left(\left(-\frac{5}{14}y\right) - y\right)$$

$$-\frac{10}{14}y + 2 \cdot \left(-4\frac{5}{14}y\right) + 1 = -2 \cdot \left(-1\frac{5}{14}y\right)$$

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

$$-9\frac{6}{14}y + 1 = 2\frac{10}{14}y$$

$$-12\frac{2}{14}y + 1 = 0$$

$$-12\frac{2}{14}y = -1$$

$$y = \frac{14}{170} = \frac{7}{85}$$

$$6 \cdot \left(3x + \frac{7}{85}\right) - 2x = 2x + \frac{7}{85}$$

$$18x + \frac{42}{85} - 2x = 2x + \frac{7}{85}$$

$$16x + \frac{42}{85} = 2x + \frac{7}{85}$$

$$14x + \frac{42}{85} = \frac{7}{85}$$

$$14x = -\frac{35}{85}$$

$$x = -\frac{1}{34}$$