

①

$$8x + 2y = 8 \text{ ①}$$

$$2x - 6y = 2 \text{ ②}$$

$$\text{②} \cdot -4$$

$$\cancel{8x} + 2y = 8$$

$$-\cancel{8x} + 24y = -8$$

$$y = \frac{0}{26}$$

$$y = 0$$

substituímos en ①

$$2x - 6(0) = 2$$

$$2x = 2$$

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

$$x = 1$$

$$x = 1$$

$$x = 1$$

$$y = 0$$

②

$$x - y + 3z = 7 \quad (1)$$

$$2x + 3y + z = 9 \quad (2)$$

$$x + 2y - z = 1 \quad (3)$$

$$(1) \times (3)$$

$$x - y + 3z = 7$$

$$3x + 6y - 3z = 3$$

$$4x + 5y = 10$$

$$(2) \times (3)$$

$$2x + 3y + z = 9$$

$$x + 2y - z = 1$$

$$2x + 3y + z + x + 2y - z = 9 + 1$$

$$3x + 5y = 10$$

$$3x + 5y = 10$$

$$4x + 5y = 10 \quad (4)$$

$$3x + 5y = 10 \quad (-1)$$

$$4x + 5y = 10$$

$$-3x - 5y = -10$$

$$x = 0$$

$$5y = 10$$

$$3(0) + 5y = 10$$

$$0 + 5y = 10$$

$$y = 10/5$$

$$y = 2$$

replace in (1) x, y

$$2(0) + 3(2) + z = 9$$

$$0 + 6 + z = 9$$

$$z = 9 - 6$$

$$z = 3$$

$$x = 0$$

$$y = 2$$

$$z = 3$$

$$\begin{cases} 2x_1 + 3x_2 + x_3 - x_4 = 28 \\ 3x_1 - 2x_2 + 2x_3 - x_4 = 35 \\ x_1 + x_2 + x_3 + x_4 = 20 \\ 2x_1 - x_2 + 3x_3 + x_4 = 22 \end{cases}$$

$$\begin{cases} x_1 + 1.5x_2 + 0.5x_3 - 0.5x_4 = 14 \\ 3x_1 - 2x_2 + 2x_3 - x_4 = 35 \\ x_1 + x_2 + x_3 + x_4 = 20 \\ 2x_1 - x_2 + 3x_3 + x_4 = 22 \end{cases}$$

$$\begin{cases} x_1 = -1.5x_2 - 0.5x_3 + 0.5x_4 + 14 \\ 3x_1 - 2x_2 + 2x_3 - x_4 = 35 \\ x_1 + x_2 + x_3 + x_4 = 20 \\ 2x_1 - x_2 + 3x_3 + x_4 = 22 \end{cases}$$

$$\begin{cases} x_1 = -1.5x_2 - 0.5x_3 + 0.5x_4 + 14 \\ 3(-1.5x_2 - 0.5x_3 + 0.5x_4 + 14) - 2x_2 + 2x_3 - x_4 = 35 \\ (-1.5x_2 - 0.5x_3 + 0.5x_4 + 14) + x_2 + x_3 + x_4 = 20 \\ 2(-1.5x_2 - 0.5x_3 + 0.5x_4 + 14) - x_2 + 3x_3 + x_4 = 22 \end{cases}$$

$$\begin{cases} x_1 = -1.5x_2 - 0.5x_3 + 0.5x_4 + 14 \\ -6.5x_2 + 0.5x_3 + 0.5x_4 = -7 \\ -0.5x_2 + 0.5x_3 + 1.5x_4 = 6 \\ -4x_2 + 2x_3 + 2x_4 = -6 \end{cases}$$

$$\begin{cases} x_1 = -1.5x_2 - 0.5x_3 + 0.5x_4 + 14 \\ 0.5x_2 - \frac{1}{13}x_3 - \frac{1}{13}x_4 = \frac{14}{13} \\ -0.5x_2 + 0.5x_3 + 1.5x_4 = 6 \\ -4x_2 + 2x_3 + 2x_4 = -6 \end{cases}$$

$$x_1 = -1.5x_2 - 0.5x_3 + 0.5x_4 + 14$$

$$x_2 = \frac{1}{13}x_3 + \frac{1}{13}x_4 + \frac{14}{13}$$

$$-0.5x_2 + 0.5x_3 + 1.5x_4 = 6$$

$$-4x_2 + 2x_3 + 2x_4 = -6$$

$$x_1 = -1.5x_2 - 0.5x_3 + 0.5x_4 + 14$$

$$x_2 = \frac{1}{13}x_3 + \frac{1}{13}x_4 + \frac{14}{13}$$

$$-0.5\left(\frac{1}{13}x_3 + \frac{1}{13}x_4 + \frac{14}{13}\right) + 0.5x_3 + 1.5x_4 = 6$$

$$-4\left(\frac{1}{13}x_3 + \frac{1}{13}x_4 + \frac{14}{13}\right) + 2x_3 + 2x_4 = -6$$

$$x_1 = -1.5x_2 - 0.5x_3 + 0.5x_4 + 14$$

$$x_2 = \frac{1}{13}x_3 + \frac{1}{13}x_4 + \frac{14}{13}$$

$$\frac{6}{13}x_3 + \frac{19}{13}x_4 = \frac{88}{13}$$

$$\frac{22}{13}x_3 + \frac{22}{13}x_4 = -\frac{22}{13}$$

$$x_1 = -1.5x_2 - 0.5x_3 + 0.5x_4 + 14$$

$$x_2 = \frac{1}{13}x_3 + \frac{1}{13}x_4 + \frac{14}{13}$$

$$x_3 = -\frac{19}{6}x_4 + \frac{88}{6}$$

$$\frac{22}{13}x_3 + \frac{22}{13}x_4 = -\frac{22}{13}$$

$$x_1 = -1.5x_2 - 0.5x_3 + 0.5x_4 + 14$$

$$x_2 = \frac{1}{13}x_3 + \frac{1}{13}x_4 + \frac{14}{13}$$

$$x_3 = -\frac{19}{6}x_4 + \frac{85}{6}$$

$$\frac{22}{13} \left(-\frac{19}{6}x_4 + \frac{85}{6} \right) + \frac{22}{13}x_4 = -\frac{22}{13}$$

$$x_1 = -1.5x_2 - 0.5x_3 + 0.5x_4 + 14$$

$$x_2 = \frac{1}{13}x_3 + \frac{1}{13}x_4 + \frac{14}{13}$$

$$x_3 = -\frac{19}{6}x_4 + \frac{85}{6}$$

$$\frac{11}{3}x_4 = -\frac{77}{3}$$

$$x_1 = -1.5x_2 - 0.5x_3 + 0.5x_4 + 14$$

$$x_2 = 1/13 x_3 + 1/13 x_4 + 14/13$$

$$x_3 = -\frac{19}{6}x_4 + \frac{85}{6}$$

$$x_4 = 7$$

$$x_1 = 20$$

$$x_2 = 1$$

$$x_3 = -8$$

$$x_4 = 7$$

4

$$2x_1 + 3x_2 - x_3 + 4x_4 - 5x_5 = 10$$

$$x_1 - 2x_2 + 3x_3 - 4x_4 + 5x_5 = 5$$

$$3x_1 + x_2 + 2x_3 - 3x_4 + 4x_5 = -2$$

$$-2x_1 + 4x_2 - x_3 + 5x_4 - x_5 = 7$$

$$4x_1 - 3x_2 + 5x_3 - 2x_4 + x_5 = 3$$

$$x_1 + 1.5x_2 - 0.5x_3 + 2x_4 - 2.5x_5 = 5$$

$$x_1 - 2x_2 + 3x_3 - 4x_4 + 5x_5 = 5$$

$$3x_1 + x_2 + 2x_3 - 3x_4 + 4x_5 = -2$$

$$-2x_1 + 4x_2 - x_3 + 5x_4 - x_5 = 7$$

$$4x_1 - 3x_2 + 5x_3 - 2x_4 + x_5 = 3$$

$$x_1 = -1.5x_2 + 0.5x_3 - 2x_4 + 2.5x_5 + 5$$

$$(-1.5x_2 + 0.5x_3 - 2x_4 + 2.5x_5 + 5) - 2x_2 + 3x_3 - 4x_4 + 5x_5 = 5$$

$$3(-1.5x_2 + 0.5x_3 - 2x_4 + 2.5x_5 + 5) + x_2 + 2x_3 - 3x_4 + 4x_5 = -2$$

$$-2(-1.5x_2 + 0.5x_3 - 2x_4 + 2.5x_5 + 5) + 4x_2 - x_3 + 5x_4 - x_5 = 7$$

$$4(-1.5x_2 + 0.5x_3 - 2x_4 + 2.5x_5 + 5) - 3x_2 + 5x_3 - 2x_4 + x_5 = 3$$

$$x_1 = -1.5x_2 + 0.5x_3 - 2x_4 + 2.5x_5 + 5$$

$$-3.5x_2 + 3.5x_3 - 6x_4 + 7.5x_5 = 0$$

$$-3.5x_2 + 3.5x_3 - 4x_4 + 11.5x_5 = -17$$

$$2x_2 = 2x_3 - 4x_4 - 5x_5 = 17$$

$$-4x_2 + 7x_3 - 10x_4 + 11x_5 = -17$$

$$x_1 = -1.5x_2 + 0.5x_3 - 2x_4 + 2.5x_5 + 5$$

$$(x_2 - x_3) + \frac{12}{7}x_4 - \frac{15}{7}x_5 = 0$$

$$-3.5x_2 + 3.5x_3 - 1x_4 + 11.5x_5 = -17$$

$$7x_2 - 2x_3 + 1x_4 + 11.5x_5 = -17$$

$$-9x_2 + 2x_3 - 10x_4 + 11x_5 = -17$$

$$x_1 = -1.5x_2 + 0.5x_3 - 2x_4 + 2.5x_5 + 5$$

$$x_2 = x_3 - \frac{12}{7}x_4 + \frac{15}{7}x_5$$

$$x_3 = 0.5x_4 - 10x_5 + 3.4$$

$$x_4 = \frac{4}{3}x_5 + \frac{17}{3}$$

$$x_5 = -35.87$$

$$x_1 = -30.14$$

$$x_2 = 38.08$$

$$x_3 = 42.67$$

$$x_4 = -42.10$$

$$x_5 = -35.87$$

$$\begin{aligned}
 6. \quad & 3x_1 + 2x_2 - x_3 + 4x_4 - 5x_5 + 6x_6 = 20 \\
 & x_1 + 2x_2 - 3x_3 + 4x_4 - x_5 + 2x_6 = 10 \\
 & 4x_1 - x_2 + 2x_3 + x_4 - 3x_5 + 4x_6 = 30 \\
 & -2x_1 + x_2 - x_3 + 3x_4 + x_5 + 2x_6 = -5 \\
 & x_1 + x_2 + x_3 + x_4 + x_5 - x_6 = 15 \\
 & 3x_1 - 2x_2 + 4x_3 - 5x_4 + x_5 = 3x_6 = 28
 \end{aligned}$$

$$x_1 = -\frac{2}{3}x_2 + \frac{1}{3}x_3 - \frac{4}{3}x_4 - \frac{5}{3}x_5 + 2x_6 = \frac{20}{3}$$

$$x_2 = 2x_3 - 2x_4 - 0,5x_5 + 2,5$$

$$x_3 = 0,75x_4 + 1,375x_5 - x_6 - 3,125$$

$$x_4 = -\frac{5}{26}x_5 = \frac{12}{13}x_6 + \frac{95}{26}$$

$$x_5 = \frac{77}{67}x_6 + \frac{105}{67}$$

$$x_6 = \frac{956}{1041}$$

$$x_1 = 7440/1041$$

$$x_2 = 745/1041$$

$$x_3 = 2145/1041$$

$$x_4 = 7270/1041$$

$$x_5 = 3415/1041$$

$$x_6 = 950/1041$$