

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

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

$$\begin{aligned} 1y &= 2 \cdot (-1) + (-2x) \cdot (-1) \\ -x + 3y &= -3 \end{aligned}$$

$$\begin{aligned} y &= 2 \cdot (-1) + (-2x) \cdot (-1) \\ -x + 3y &= -3 \end{aligned}$$

$$\begin{aligned} y &= -2 + (-2x) \cdot (-1) \\ -x + 3y &= -3 \end{aligned}$$

$$\begin{aligned} x + 3(-2 + 2x) &= -3 \\ y &= -2 + 2x \end{aligned}$$

$$\begin{aligned} -x + 5(-2 + 2x) \\ -x - 6 + 6x = -3 \\ y = -2 + 2x \end{aligned}$$

$$5x - 6 = -3$$

$$y = -2 + 2x$$

$$\begin{aligned} y &= -2 + 2 \left(\frac{3}{5}\right) \\ x &= \left(\frac{3}{5}\right) \end{aligned}$$

$$y = -2 + \left(\frac{6}{5}\right)$$

$$x = \left(\frac{3}{5}\right)$$

$$\begin{aligned} y &= -2 \cdot \left(\frac{5}{5}\right) + \left(\frac{6}{5}\right) \\ x &= \left(\frac{3}{5}\right) \end{aligned}$$

$$y = \frac{-2 \cdot 5 + 6}{5}$$

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

$$y = \frac{-2 \cdot 5 + 6}{5} \quad y = \frac{-10 + 6}{5}$$

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

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

$$y = \frac{-4}{5}$$

$$\left( \frac{3}{5}, -\frac{4}{5} \right) //$$

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

2. b)  $\begin{cases} 3x - y + z = 1 \\ 2x + 3z = 1 \\ 4x + y - 2z = 7 \end{cases}$

$$2x = -1 - 3z$$

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

$$4x + y - 2z = 7$$

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

$$4x + y - 2z = 7$$

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

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

$$\begin{matrix} 3x - y + z &= 1 \\ 4x + y - 2z &= 7 \end{matrix}$$

$$\frac{-3}{2} - \frac{y - 9z}{2} + \frac{z \cdot 2}{2} = 1$$

$$4x + y - 2z = 7$$

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

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

$$4x + y - 2z = 7$$

$$\frac{-3}{2} - \frac{y - 9z}{2} + \frac{z \cdot 2}{2} = 1$$

$$3\left(\frac{-1 - 3z}{2}\right) - y + z = 1$$

$$4x + y - 2z = 7$$

$$\heartsuit x = \frac{-1 - 3z}{2}$$

$$4x + y - 2z = 7$$

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

$$\frac{-y + -3 - 9z + 2z}{2} = 1$$

$$\frac{-(2y+3) - (3z)}{2} = 1$$

$$\frac{4x + y - 2z}{2} = 7$$

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

$$\frac{4x + y - 2z}{2} = 7$$

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

$$\frac{y + -3 - 7z}{2} = 1$$

$$\frac{-(2y+3+7z)}{2} = 1$$

$$\frac{4x + y - 2z}{2} = 7$$

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

$$\frac{4x + y - 2z}{2} = 7$$

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

(d. 8)

$$\frac{-y \cdot 2 + -3 - 7z}{2} = 1$$

$$\frac{-2y + 3 + 7z}{2} = 1$$

$$\frac{4x + y - 2z}{2} = 7$$

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

$$\frac{4x + y - 2z}{2} = 7$$

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

$$\frac{-y \cdot 2 - 3 - 7z}{2} = 1$$

$$4\left(\frac{-1 - 3z}{2}\right) + y - 2z = 7$$

$$\frac{4x + y - 2z}{2} = 7$$

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

$$\frac{-2y + 3 + 7z}{2} = 1$$

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

$$\frac{-(2y) - 1 \cdot 3 - 7z}{2} = 1$$

$$\frac{-2 + y - 8z}{2} = 7$$

$$\frac{4x + y - 2z}{2} = 7$$

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

$$\frac{-2y + 3 + 7z}{2} = 1$$

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

$$\frac{-(2y+3) - 7z}{2} = 1$$

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$$\frac{4x + y - 2z}{2} = 7$$

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

$$y - 8z = 7 + 2$$

$$-2y + 3 + 7z = 1$$

2

$$x = -1 - 3z$$

2 2

$$23z + 21 = -2$$

$$y = 9 + 8z$$

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

2 2

$$23z = -23$$

$$y = 9 + 8z$$

$$-2y + 3 + 7z = 1$$

2

$$x = -1 - 3z$$

2 2

$$z = -1$$

$$y = 9 + 8z$$

$$-2(9 + 8z) + 3 + 7z = 1$$

2

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

2 2

$$y = 9 + 8z$$

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

2

$$y = 9 + 8(-1)$$

$$z = -1$$

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

2 2

$$y = 9 + 8z$$

$$x = -1 - 3z$$

2 2

$$y = 1$$

$$z = -1$$

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

2 2

$$-2 \left( \frac{23z + 21}{2} \right) = -2 \cdot 1$$

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

$$y = 9 + 8z$$

$$z = -1$$

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

2 2

$$y = 1$$

$$z = -1$$

$$23z + 21 = -2 \cdot 1$$

$$x = -1 - 3 \cdot -1$$

$$y = 9 + 8z$$

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

2 2

$$y = 1$$

$$z = -1$$

$$x = -1 + 3$$

$$y = 1$$

$$z = -1$$

$$x = 1$$

$$y = 1$$

$$z = -1$$

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

2)

$$y = 1$$

$$z = -1$$

$$v = (1, 1, -1)$$

$$2) \begin{cases} 3x + 4y - z = 1 \\ 4x + 5y + 2z = 12 \\ x - 2y + 3z = 8 \end{cases}$$

$$3x + 4y + 10z + 5y + 2z = 12$$

$$24 + 10y - 10z = 1$$

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

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

$$3x + 13y - 10z = 12$$

$$3x + 4y - z = 1$$

$$24 + 10y - 10z = 1$$

$$4x + 5y + 2z = 12$$

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

$$3(8 + 2y - 3z) + 4y - z = 1$$

$$13y - 10z = 12 - 32$$

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

$$24 + 10y - 10z = 1$$

$$4x + 5y + 2z = 12$$

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

$$24 + 10y - 10z = 1$$

$$13y = 12 - 32 + 10z$$

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

$$24 + 10y - 10z = 1$$

$$4x + 5y + 2z = 12$$

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

$$4(8 + 2y - 3z) + 5y + 2z = 12$$

$$13y = -20 + 10z$$

$$24 + 10y - 10z = 1$$

$$13 \quad 13 \quad 13$$

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

$$24 + 10y - 10z = 1$$

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

$$4 \cdot 8 + 4(2y) + 4(-3z) + 5y + 2z = 12$$

$$y = -20 + 10z$$

$$24 + 10y - 10z = 1$$

$$13 \quad 13$$

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

$$24 + 10y - 10z = 1$$

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

$$24 + 10 \left( -\frac{20}{13} + \frac{10z}{13} \right) - 10z = 1$$

$$\heartsuit y = -\frac{20}{13} + \frac{10z}{13}$$

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

$$24 \cdot 13 - 200 + 100z - 10z = 1$$

$$y = -\frac{20}{13} + \frac{10z}{13}$$

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

$$24 + 10 \left( -\frac{20}{13} \right) + 10 \left( \frac{10z}{13} \right) - 10z = 1$$

$$y = -\frac{20}{13} + \frac{10z}{13}$$

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

$$24 \cdot 13 - 200 + 100z - 10z = 1$$

$$y = -\frac{20}{13} + \frac{10z}{13}$$

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

$$24 + \frac{-10 \cdot 20}{13} + 10 \left( \frac{10z}{13} \right) - 10z = 1$$

$$y = -\frac{20}{13} + \frac{10z}{13}$$

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

$$112 + 100z - 10z \cdot 13 = 1$$

$$y = -\frac{20}{13} + \frac{10z}{13}$$

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

$$24 + \frac{-200}{13} + 10 \left( \frac{10z}{13} \right) - 10z = 1$$

$$y = -\frac{20}{13} + \frac{10z}{13}$$

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

$$y = -\frac{20}{13} + \frac{10z}{13}$$

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

$$112 + 30z = 1$$

$$24 - \frac{200}{13} + \frac{100z}{13} - 10z = 1$$

$$y = -\frac{20}{13} + \frac{10z}{13}$$

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

$$y = -\frac{20}{13} + \frac{10z}{13}$$

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

$$2(56) + 2(-15z) = 1$$

$$x = 8 \cdot 13 - \frac{40}{13} + \frac{20z}{13} - \frac{32}{13}$$

$$y = \frac{-20}{13} + \frac{10z}{13}$$

$$2(56 - 15z) = 1$$

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

$$y = -\frac{20}{13} + \frac{10z}{13}$$

$$2(56 - 15z) = 1$$

$$x = 104 - \frac{40}{13} + \frac{20z}{13} - \frac{32}{13}$$

$$y = -\frac{20}{13} + \frac{10z}{13}$$

$$2(56 - 15z) = 1$$

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

$$y = -\frac{20}{13} + \frac{10z}{13}$$

$$x = 8 + 2 \left( -\frac{20}{13} + \frac{10z}{13} \right) - \frac{32}{13}$$

$$2(56 - 15z) = 1$$

$$x = 64 + \frac{20z}{13} - \frac{32}{13} \cdot \frac{13}{13}$$

$$y = \frac{-20}{13} + \frac{10z}{13}$$

$$2(56 - 15z) = 1$$

$$x = 8 + \frac{-40}{13} + 2 \left( \frac{10z}{13} \right) - \frac{32}{13}$$

$$2(56 - 15z) = 1$$

$$x = 64 + \frac{20z}{13} - \frac{32}{13} \cdot \frac{13}{13}$$

$$y = -\frac{20}{13} + \frac{10z}{13}$$

$$2(56 - 15z) = 1$$

$$x = 8 - \frac{40}{13} + \frac{20z}{13} - \frac{32}{13}$$

$$y = -\frac{20}{13} + \frac{10z}{13}$$

$$2(56 - 15z) = 1$$

$$x = 64 - 10z$$

$$y = -\frac{20}{13} + \frac{10z}{13}$$

$$2(56 - 15z) = 1$$

$$2(56 - 15z) \cdot 13 = 1 \cdot 13$$

$$z = -99$$

-99

-30

$$\heartsuit x = 64 - 19z$$

$$x = 64 - 19z$$

13

13

$$y = \frac{-20}{13} + \frac{10z}{13}$$

$$y = \frac{-20}{13} + \frac{10z}{13}$$

$$112 + 2(-15z) = 1 \cdot 13$$

$$z = -\frac{1}{2} \cdot 33$$

$$x = \frac{64 - 19z}{13}$$

$$-6 \cdot 10$$

$$y = \frac{-20}{13} + \frac{10z}{13}$$

$$y = \frac{20}{13} + \frac{10z}{13}$$

$$112 - 30z = 1 \cdot 13$$

$$x = \frac{64 - 19z}{13}$$

$$z = \frac{33}{10}$$

$$y = \frac{-20}{13} + \frac{10z}{13}$$

$$x = \frac{64 - 19z}{13}$$

$$-30z + 112 = 13$$

$$y = -\frac{20}{13} + \frac{10z}{13}$$

$$x = \frac{64 - 19z}{13}$$

$$x = 64 - 19 \left( \frac{33}{10} \right)$$

$$y = -\frac{20}{13} + \frac{10z}{13}$$

$$z = \frac{33}{10}$$

$$-30z = 13 - 112$$

$$y = -\frac{20}{13} + \frac{10z}{13}$$

$$x = \frac{64 - 19z}{13}$$

$$x = 64 + \left( \frac{19 \cdot 33}{10} \right)$$

$$y = -\frac{20}{13} + \frac{10z}{13}$$

$$z = \frac{33}{10}$$

$$y = -\frac{20}{13} + \frac{10z}{13}$$

$$x = 64 + \left(-\frac{627}{10}\right)$$

13

$$z = \frac{33}{10}$$

$$y = -\frac{20}{13} + \frac{102}{13}$$

$$x = \frac{1}{10}$$

y = 1

$$z = \frac{33}{10}$$



$$x = \frac{64 - 627}{10}$$

13

$$z = \frac{33}{10}$$

$$y = -\frac{20}{13} + \frac{102}{13}$$

$$x = \frac{13}{10} - 1$$

10 13

$$z = \frac{33}{10}$$

$$y = -\frac{20}{13} + \frac{102}{13}$$

$$y = -\frac{20}{13} + 10 \left(\frac{33}{10}\right)$$

$$x = \frac{1}{10}$$

$$z = \frac{33}{10}$$

$$y = -\frac{20}{13} + \frac{33}{13}$$

$$x = \frac{1}{10}$$

$$z = \frac{33}{10}$$

$$y = \frac{13}{13}$$

$$x = \frac{1}{10}$$

$$z = \frac{33}{10}$$



$$2 + (-33) + (-3) = -34$$

3) 
$$\begin{cases} x + 2y + z = 1 \\ 3x + y - 11z = -2 \\ 2x + 3y - z = -1 \end{cases}$$

$$D = \begin{vmatrix} 1 & 2 & 1 & | & 1 & 2 \\ 3 & 1 & -11 & | & 3 & 1 \\ 2 & 3 & -1 & | & 2 & 3 \end{vmatrix}$$

$$-1 + (-44) + 9 = -36$$

$$1 + (-33) + 4 = -28$$

$$D_x = \begin{vmatrix} 1 & 2 & 1 & | & 1 & 2 \\ -2 & 1 & -11 & | & -2 & 1 \\ 1 & 3 & -1 & | & 1 & 3 \end{vmatrix}$$

$$-29 - (-28) = -1,$$

$$-1 + (-22) + (-6) = -29$$

$$-4 + (-11) + (-3) = -18$$

$$D_y = \begin{vmatrix} 1 & 1 & 1 & | & 1 & 1 \\ 3 & -2 & -11 & | & 3 & -2 \\ 2 & 1 & -1 & | & 2 & 1 \end{vmatrix}$$

$$-17 - (-18) = 1$$

$$2 + (-22) + 3 = -17$$

$$a+b+c$$

$$-1 + 1 + 0 = 0,,$$

$$2 + (-6) + 6 = 2$$

$$D_z = \begin{vmatrix} 1 & 2 & 1 & | & 1 & 2 \\ 3 & 1 & -2 & | & 3 & 1 \\ 2 & 3 & 1 & | & 2 & 3 \end{vmatrix}$$

$$2 - 2 = 0$$

$$1 + (-8) + 9 = 2$$

$$-3 + (-2) + (-4) = -9$$

4) 
$$\begin{cases} x + 2y - 3z = 29 \\ x + 3y + 2z = 4 \\ x - y - 2z = 8 \end{cases}$$

$$D = \begin{vmatrix} 1 & 2 & -3 & | & 1 & 2 \\ 1 & 3 & 2 & | & 1 & 3 \\ 1 & -1 & -2 & | & 1 & -1 \end{vmatrix}$$

$$1 - (-15) = 16$$

$$-6 + 4 + 3 = 1$$

$$-72 + (-58) + (-16) = -146$$

$$D_x = \begin{vmatrix} 29 & 2 & -3 & | & 29 & 2 \\ 4 & 3 & 2 & | & 4 & 3 \\ 8 & 1 & -2 & | & 8 & -1 \end{vmatrix}$$

$$-130 - (-146) = 16$$

$$-174 + 32 + 12 = -130$$

$$x = \frac{D_x}{D} \Rightarrow \frac{16}{16} = 1,,$$

$$-12 + 16 + (-58) = -54$$

$$\begin{array}{|c|c|} \hline & 1 & 2 \\ \hline D_y = & 1 & 4 \\ \hline & 1 & 8 \\ \hline \end{array} \quad \begin{array}{|c|c|} \hline & 1 & 2 \\ \hline 1 & 4 & 2 \\ \hline 1 & 8 & -2 \\ \hline \end{array} \quad 1 & 2 \\ 26 - (-54) = 80, & \\ 1 & 8 & 1 & 8 \\ -8 + 58 + (-24) = 26 & \end{array}$$

$$y = D_y = \frac{80}{16} = 5,$$



$$87 + (-4) + 16 = 99$$

$$z = D_z = \frac{-96}{16} = -6$$

$$\begin{array}{|c|c|} \hline & 1 & 2 & 2 \\ \hline D_z = & 1 & 3 & 4 \\ \hline & 1 & -1 & 8 \\ \hline \end{array} \quad \begin{array}{|c|c|} \hline & 1 & 2 \\ \hline 1 & 3 & 1 \\ \hline 1 & -1 & 1 \\ \hline \end{array} \quad 1 & 2 \\ 3 - 99 = -96, & \\ 1 & 3 & 1 & -1 \\ 24 + 8 + (-29) = 3 & \end{array}$$

$$s = 1 + 5 + (-6) = 0,,$$

$$3z = -5$$

$$5) \begin{cases} 2x + y = 5 \\ 2y + z = 3 \end{cases} \quad | \quad z = -\frac{5}{3},$$

$$3x + 2y + z = 7 \quad | \quad 2y - \frac{5}{3} = 3$$

$$2y = \frac{14}{3}$$

$$y = \frac{7}{3},$$

$$y = 2z = -1$$

$$\begin{array}{l} \begin{cases} 2x + y = 5 \\ 2y + z = 3 \end{cases} \quad | \quad y = 2z = -1 \\ \quad 2x + (-1) = 5 \end{array}$$

$$\begin{cases} 2x + y = 5 \\ 2y + z = 3 \end{cases}$$

$$2x + \frac{7}{3} = 5$$

$$2x = \frac{8}{3}$$

$$x = \frac{8}{6} = \frac{4}{3},$$

$$x = \frac{8}{6} = \frac{4}{3},$$

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

$$D = \begin{vmatrix} 1 & 0 & 0 & | & 1 & 0 \\ 2 & 1 & 0 & | & 2 & 1 \\ -1 & 2 & 2 & | & -1 & 2 \end{vmatrix} \quad 2-0=2$$

$$2+0+0=2$$

$$D_x = \begin{vmatrix} 3 & 0 & 0 & | & 3 & 0 \\ 7 & 1 & 0 & | & 7 & 1 \\ 1 & 2 & 2 & | & -1 & 2 \end{vmatrix} \quad 6-0=6$$

$$6+0+0=6$$

$$D_y = \begin{vmatrix} 1 & 3 & 0 & | & 1 & 3 \\ 2 & 7 & 0 & | & 2 & 7 \\ -1 & -1 & 2 & | & -1 & 1 \end{vmatrix} \quad 14-12=2$$

$$14+0+0=14$$

$$D_z = \begin{vmatrix} 1 & 0 & 3 & | & 1 & 0 \\ 2 & 1 & 7 & | & 2 & 1 \\ -1 & 2 & -1 & | & -1 & 2 \end{vmatrix} \quad 11-11=0$$

$$-1+0+12=11$$

$$v = \{3, 1, 0\}$$

### Tarefa Básica

semana 6

$$1) \begin{cases} 2x - y - 3z = -5 \\ x + 3y - z = 11 \\ x - 5z = 3 \end{cases}$$

$$\left( \begin{array}{ccc|c} 1 & 0 & -5 & 3 \\ 2 & -1 & -3 & -5 \\ 1 & 3 & -1 & 11 \end{array} \right) \xrightarrow{\begin{array}{l} (1)-(3) \\ (2)-2(1) \\ (3)-1(1) \end{array}} \left( \begin{array}{ccc|c} 1 & 0 & -5 & 3 \\ 0 & -1 & 7 & -11 \\ 0 & 3 & 4 & 8 \end{array} \right) \xrightarrow{\begin{array}{l} (2)+(-3) \\ (3)-3(2) \end{array}} \left( \begin{array}{ccc|c} 1 & 0 & -5 & 3 \\ 0 & 1 & -3 & -11 \\ 0 & 0 & 25 & -23 \end{array} \right)$$

$$x - 5 - 1 = 3 \quad -y + 7 - 1 = -11 \quad 25z = -23$$

$$x = -2 \quad -y = 4 \quad z = 1$$

$$2) \begin{cases} x = 2y \\ 2y = 3z \\ x + y + z = 11 \end{cases} \quad \begin{aligned} 2y + y + 2y &= 11 \\ 3 & \\ 6y + 3y + 2y &= 33 \\ 11y &= 33 \end{aligned}$$

$$\begin{aligned} 2y &= 32 \\ z &= 2y/3 \end{aligned} \quad \begin{aligned} x &= 6 ; y = 3 ; z = 2 \\ 6 + (2 \cdot 3) + (3 \cdot 2) &= 18 \end{aligned}$$

$$3) \begin{cases} x + y + z = 0 \\ 2x - y - 2z = 1 \\ 6y + 3z = -12 \end{cases} \quad \begin{aligned} x &= -3 + 4 \\ & \\ x &= 1 \end{aligned}$$

$$\begin{aligned} 1 - 3 + 2 &= 0 \\ 2x - y - 2(-2y - 4) &= 1 \\ 2x - y + 4y + 8 &= 1 \\ 2x + 3y &= -7 \end{aligned}$$

$$\begin{aligned} 2(y + 4) + 3y &= -7 \\ 2y + 8 + 3y &= -7 \\ 5y &= -15 \\ y &= -3 \end{aligned}$$

$$\begin{aligned} 2(y + 4) + 3y &= -7 \\ 2y + 8 + 3y &= -7 \\ 5y &= -15 \\ y &= -3 \end{aligned}$$

$$4) \quad x + y + z = 68$$

$$z = 68 - x - y$$

$$20z = x - y$$

$$\heartsuit \quad y = 20z = x \\ 100$$

$$100$$

$$z = 5(x - y)$$

$$5x - 5y = 68 - x - y$$

$$z + 20x = 3y$$

$$6x - 4y = 68$$

$$100$$

$$y = 20z = x$$

$$5x - 5y + \frac{x}{5} = 3y$$

$$100$$

$$z = 20x = 3y$$

$$25x - 25y + x = 15y$$

$$100$$

$$26x - 40y = 0$$

$$-60x + 40y = -680$$

$$40y = 26x = 520$$

$$-34x = -680$$

$$y = 520 = 13, //$$

$$40$$

$$x = 20, //$$

$$z = 68 - 20 - 13 = 35, //$$

$$= 35 - 20 = 15, //$$

$$5) \quad \begin{cases} 3x + 4z = 134 \\ 1x + 5z = 115 \\ 2x + 1y = 48 \end{cases}$$

$$1x + 5z = 115$$

$$2x + 1y = 48$$

0+0+0

$$D = \begin{vmatrix} 0 & 3 & 0 \\ 1 & 0 & 5 \\ 2 & 1 & 0 \end{vmatrix}$$

$$34 - 0 = 34, //$$

$$0 + 30 + 4 = 34$$