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1. $2x_1 + 7x_2 - 11x_3 = 6$
$x_1 + 5x_2 + x_3 = -5$
$2x_1 + 7x_2 - 11x_3 = 6$

$$\left[\begin{array}{ccc|c} 2 & 7 & -11 & 6 \\ 1 & 5 & 1 & -5 \\ 2 & 7 & -11 & 6 \end{array}\right] \xrightarrow{R_2 = R_2 - C.R_1} \left[\begin{array}{ccc|c} 2 & 7 & -11 & 6 \\ 0 & \frac{3}{2} & \frac{13}{2} & -8 \\ 2 & 7 & -11 & 6 \end{array}\right]$$

Pivot : 2 : R_{11}

$C = \frac{R_{21}}{R_{11}} = \frac{1}{2}$ ← Pivot

Pivot : 2 : R_{11}

$C = \frac{R_{31}}{R_{11}} = \frac{2}{2} = 1$ ← Pivot

$R_3 = R_3 - C.R_{11}$

$$\left[\begin{array}{ccc|c} 2 & 7 & -11 & 6 \\ 0 & \frac{3}{2} & \frac{13}{2} & -8 \\ 0 & 0 & 0 & 0 \end{array}\right]$$

misal $x_3 = p$

$\frac{3}{2}x_2 + \frac{13}{2}p = -8$

$\frac{3}{2}x_2 = -8 - \frac{13}{2}p$

$x_2 = -8 \cdot \frac{2}{3} - \frac{13}{2} \cdot \frac{2}{3}p$

$x_2 = -\frac{16}{3} - \frac{13}{3}p$

$x_2 = \frac{1}{3}(-16 - 13p)$

$2x_1 + 7\left(\frac{1}{3}(-16-13p)\right) - 11p = 6$

$x_1 = 6 + 11p - \frac{7}{3}(-16-13p)$

$x_1 = 6 + 11p + \frac{112}{3} + \frac{91}{3}p$

$x_1 = \frac{130}{3} + \frac{124}{3}p$

$x_1 = \frac{124}{3}p + \frac{130}{3}$

$x_1 = \frac{2}{3}(62p + 65)$

$\therefore (x_1, x_2, x_3) = \left(\frac{2}{3}(62p+65), \frac{1}{3}(-16-13p), p\right)$

Tidak terdapat nilai pasti kombinasi penyelesaian dari sistem persamaan tersebut

2. $10x_1 - 5x_2 + 2x_3 = 6$
$3x_1 + 4x_2 + 8x_3 = -7$
$x_1 + 5x_2 - 5x_3 = 9$

$$\left[\begin{array}{ccc|c} 10 & -5 & 2 & 6 \\ 3 & 4 & 8 & -7 \\ 1 & 5 & -5 & 9 \end{array}\right] \longrightarrow \left[\begin{array}{ccc|c} 10 & -5 & 2 & 6 \\ 0 & \frac{11}{2} & \frac{37}{5} & -\frac{44}{5} \\ 1 & 5 & -5 & 9 \end{array}\right]$$

$R_2 = R_2 - cR_1$

Pivot: $R_{11} = 10$

$c = \frac{R_{21}}{\text{Pivot}} = \frac{3}{10}$

$4 - \frac{3}{10}(-5) = \frac{11}{2}$

$8 - \frac{3}{10}(2) = \frac{37}{5}$

$-7 - \frac{3}{10}(6) = -\frac{35}{5} - \frac{9}{5} = -\frac{44}{5}$

Pivot: $R_{11} = 10$

$c = \frac{R_{31}}{\text{Pivot}} = \frac{1}{10}$

$$\left[\begin{array}{ccc|c} 10 & -5 & 2 & 6 \\ 0 & \frac{11}{2} & \frac{37}{5} & -\frac{44}{5} \\ 0 & \frac{11}{2} & -\frac{26}{5} & \frac{42}{5} \end{array}\right] \longrightarrow \left[\begin{array}{ccc|c} 10 & -5 & 2 & 6 \\ 0 & \frac{11}{2} & \frac{37}{5} & -\frac{44}{5} \\ 0 & 0 & -\frac{63}{5} & \frac{86}{5} \end{array}\right]$$

$R_3 = R_3 - c.R_1$

$5 - \frac{1}{10}(-5) = \frac{11}{2}$

$-5 - \frac{1}{10}(2) = -\frac{26}{5}$

$9 - \frac{1}{10}(6) = \frac{45}{5} - \frac{3}{5} = \frac{42}{5}$

Pivot: $R_{22} = \frac{11}{2}$

$c = \frac{R_{32}}{\text{Pivot}} = \frac{\frac{11}{2}}{\frac{11}{2}} = 1$

$R_3 = R_3 - c.R_2$

$-\frac{26}{5} - 1.\frac{37}{5} = -\frac{63}{5}$

$\frac{42}{5} - 1.-\frac{44}{5} = \frac{86}{5}$

$-\frac{63}{5}x_3 = \frac{86}{5}$

$-63x_3 = -2$

$x_3 = \frac{86}{-63} = -\frac{86}{63} = 1,36508$

$$\frac{11}{2}x_2 + \frac{37}{5}\left(-\frac{86}{63}\right) = -\frac{44}{5}$$

$$\frac{11}{2}x_2 = -\frac{44}{5} + \frac{3182}{315}$$

$$\frac{11}{2}x_2 = \frac{82}{63}$$

$$x_2 = \frac{82}{63} \cdot \frac{2}{11}$$

$$x_2 = \frac{164}{693} = 0,23665$$

$$10x_1 - 5x_2 + 2x_3 = 6$$

$$10x_1 - 5\left(\frac{164}{693}\right) + 2\left(-\frac{86}{63}\right) = 6$$

$$10x_1 = 6 + \frac{904}{231}$$

$$10x_1 = \frac{2290}{231}$$

$$x_1 = \frac{2290}{2310} = 0,99134$$

$$\therefore (x_1, x_2, x_3) = (0,99134 , 0,23665 , -1,36508)$$