FINAL

ALJABAR LINEAR

SOAL SESI KE DUA

OLEH :

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PROGRAM STUDI ILMU KOMPUTER

JURUSAN MATEMATIKA

FAKULTAS MATEMATIKA DAN ILMU PENGETAHUAN ALAM

UNIVERSITAS HALU OLEO

KENDARI

2020

2. Dengan menggunakan aturan cramer, tentukan penyelesaian sistem persamaan linear berikut:

$$y + 2z = 6$$
$$-3x + 4y + 6z = 30$$
$$-x - 2y + 3z = 8$$

Jawab

$$\begin{cases} y + 2z = 6 \\ -3x + 4y + 6z = 30 \\ -x - 2y + 3z = 8 \end{cases}$$

Aturan cramer (Hitung determinan)

$$D = \begin{vmatrix} 0 & 1 & 2 \\ -3 & 4 & 6 \\ -1 & -2 & 3 \end{vmatrix} = 23$$

$$D_1 = \begin{vmatrix} 6 & 1 & 2 \\ 30 & 4 & 6 \\ 8 & -2 & 3 \end{vmatrix} = -82$$

$$D_2 = \begin{vmatrix} 0 & 6 & 2 \\ -3 & 30 & 6 \\ -1 & 8 & 3 \end{vmatrix} = 30$$

$$D_3 = \begin{vmatrix} 0 & 1 & 6 \\ -3 & 4 & 30 \\ -1 & -2 & 8 \end{vmatrix} = 54$$

$$x = -\frac{82}{23}$$

$$y = \frac{30}{23}$$

$$z = \frac{54}{23}$$

$$(x, y, z) = \left(-\frac{82}{23}, \frac{30}{23}, \frac{54}{23}\right)$$

PENYELESAIANNYA

$$\rightarrow \begin{cases} \frac{30}{23} + 2 \times \frac{54}{23} = 6 \\ -3 \times \left(-\frac{82}{23}\right) + 4 \times \frac{30}{23} + 6 \times \frac{54}{23} = 30 \\ -\left(-\frac{82}{23}\right) - 2 \times \frac{30}{23} + 3 \times \frac{54}{23} = 8 \end{cases}$$

$$\begin{cases} 6 = 6 \\ 30 = 30 \\ 8 = 8 \end{cases}$$