

MAT2116 – Álgebra Linear
Respostas da Lista de Exercícios 1

1.

$$\begin{cases} u + v + w = 2 \\ 2v + 2w = -2 \\ 2w = 2 \end{cases} ;$$

$u = 3, v = -2, w = 1.$

2. $u = 3/2, v = -1/2, w = -3.$ O coeficiente 1 torna o sistema singular.

3. $A = \begin{pmatrix} 0 & 1 \\ -1 & 0 \end{pmatrix}, B = \begin{pmatrix} 0 & 1 \\ 0 & 0 \end{pmatrix}, C = \begin{pmatrix} 0 & 1 \\ 1 & 0 \end{pmatrix}, D = A, E = F = \begin{pmatrix} 1 & -1 \\ 1 & -1 \end{pmatrix}.$

4. Usar identidades trigonométricas.

5. $\begin{pmatrix} 1 & 0 \\ 4 & 1 \end{pmatrix} \begin{pmatrix} 2 & 1 \\ 0 & 3 \end{pmatrix}; \begin{pmatrix} 1 & 0 & 0 \\ \frac{1}{3} & 1 & 0 \\ \frac{1}{3} & \frac{1}{4} & 1 \end{pmatrix} \begin{pmatrix} 3 & 1 & 1 \\ 0 & \frac{8}{3} & \frac{2}{3} \\ 0 & 0 & \frac{5}{2} \end{pmatrix}.$

6. $\begin{pmatrix} 1 & 0 \\ 12 & 1 \end{pmatrix}; \begin{pmatrix} 1 & 0 \\ 48 & 1 \end{pmatrix}; \begin{pmatrix} 1 & 0 \\ -6 & 1 \end{pmatrix}.$