WolframAlpha

{{281,23,467},{ 443,257,71},{ 47,491,233}}

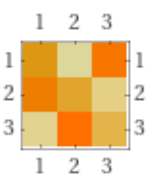
Entrada:

$$\begin{pmatrix} 281 & 23 & 467 \\ 443 & 257 & 71 \\ 47 & 491 & 233 \end{pmatrix}$$

Dimensiones:

3 (filas) × 3 (columnas)

Gráfico de matriz:



Traza:

771

Determinante:

100 671 012

Inversa:

$$\frac{1}{5592834}\begin{pmatrix} 1390 & 12\,441 & -6577 \\ -5549 & 2418 & 10\,385 \\ 11\,413 & -7605 & 3446 \end{pmatrix}$$

Polinomio característico:

$$-\lambda^3 + 771\,\lambda^2 - 130\,572\,\lambda + 100\,671\,012$$

Valores propios:

$$\lambda_1 = 771$$

$$\lambda_2 = 18\,i\,\sqrt{403}$$

$$\lambda_3 = -18\,i\,\sqrt{403}$$

Vectores propios:

$$v_1 = (1,\ 1,\ 1)$$

$$v_2 = \left(\frac{1}{74}\left(-43 - 3\,i\,\sqrt{403}\right),\ \frac{1}{74}\left(-31 + 3\,i\,\sqrt{403}\right),\ 1\right)$$

$$v_3 = \left(\frac{1}{74}\left(-43 + 3\,i\,\sqrt{403}\right),\ \frac{1}{74}\left(-31 - 3\,i\,\sqrt{403}\right),\ 1\right)$$

Diagonalización:

$$M = S.J.S^{-1}$$

donde

$$M = \begin{pmatrix} 281 & 23 & 467 \\ 443 & 257 & 71 \\ 47 & 491 & 233 \end{pmatrix}$$

$$S = \begin{pmatrix} 1 & \frac{1}{74}\,i\left(3\,\sqrt{403} + 43\,i\right) & \frac{1}{74}\left(-43 - 3\,i\,\sqrt{403}\right) \\ 1 & \frac{1}{74}\left(-31 - 3\,i\,\sqrt{403}\right) & \frac{1}{74}\,i\left(3\,\sqrt{403} + 31\,i\right) \\ 1 & 1 & 1 \end{pmatrix}$$

$$J = \begin{pmatrix} 771 & 0 & 0 \\ 0 & -18\,i\,\sqrt{403} & 0 \\ 0 & 0 & 18\,i\,\sqrt{403} \end{pmatrix}$$

$$S^{-1} = \begin{pmatrix} \frac{1}{3} & \frac{1}{3} & \frac{1}{3} \\ -\frac{1}{6} - \frac{35\,i}{6\,\sqrt{403}} & -\frac{1}{6} + \frac{1}{2}\,i\,\sqrt{\frac{13}{31}} & \frac{1}{3} - \frac{2\,i}{3\,\sqrt{403}} \\ -\frac{1}{6} + \frac{35\,i}{6\,\sqrt{403}} & -\frac{1}{6} - \frac{1}{2}\,i\,\sqrt{\frac{13}{31}} & \frac{1}{3} + \frac{2\,i}{3\,\sqrt{403}} \end{pmatrix}$$

Número de condición:

2,81334