Pembuatan Invers Matriks dengan Eliminasi Gauss-Jordan

# Langkah 1: Menulis Matriks yang Diperluas

Matriks asli \( A \):

|  |  |  |
| --- | --- | --- |
| 2 | 0 | 0 |
| 1 | 5 | 0 |
| 7 | 9 | 4 |

Matriks yang diperluas dengan matriks identitas:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 2 | 0 | 0 | 1 | 0 | 0 |
| 1 | 5 | 0 | 0 | 1 | 0 |
| 7 | 9 | 4 | 0 | 0 | 1 |

# Langkah 2: Operasi Baris

## 2.1. Bagi Baris Pertama dengan 2

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 1 | 0 | 0 | 0.5 | 0 | 0 |
| 1 | 5 | 0 | 0 | 1 | 0 |
| 7 | 9 | 4 | 0 | 0 | 1 |

## 2.2. Kurangi Baris Kedua dengan Baris Pertama

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 1 | 0 | 0 | 0.5 | 0 | 0 |
| 0 | 5 | 0 | -0.5 | 1 | 0 |
| 7 | 9 | 4 | 0 | 0 | 1 |

## 2.3. Kurangi 7xBaris Pertama dari Baris Ketiga

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 1 | 0 | 0 | 0.5 | 0 | 0 |
| 0 | 5 | 0 | -0.5 | 1 | 0 |
| 0 | 9 | 4 | -3.5 | 0 | 1 |

## 2.4. Bagi Baris Kedua dengan 5

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 1 | 0 | 0 | 0.5 | 0 | 0 |
| 0 | 1 | 0 | -0.1 | 0.2 | 0 |
| 0 | 9 | 4 | -3.5 | 0 | 1 |

## 2.5. Kurangi 9xBaris Kedua dari Baris Ketiga

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 1 | 0 | 0 | 0.5 | 0 | 0 |
| 0 | 1 | 0 | -0.1 | 0.2 | 0 |
| 0 | 0 | 4 | -3.2 | -1.8 | 1 |

## 2.6. Bagi Baris Ketiga dengan 4

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 1 | 0 | 0 | 0.5 | 0 | 0 |
| 0 | 1 | 0 | -0.1 | 0.2 | 0 |
| 0 | 0 | 1 | -0.8 | -0.45 | 0.25 |

# Hasil Akhir: Invers Matriks \( A^{-1} \)

|  |  |  |
| --- | --- | --- |
| 0.5000 | 0.0000 | 0.0000 |
| -0.1000 | 0.2000 | 0.0000 |
| -0.8000 | -0.4500 | 0.2500 |