**Macierz jednostkowa**:

|  |  |  |  |
| --- | --- | --- | --- |
| 1 | 0 | 0 | 0 |
| 0 | 1 | 0 | 0 |
| 0 | 0 | 1 | 0 |
| 0 | 0 | 0 | 1 |

Macierz **M1**:

|  |  |  |  |
| --- | --- | --- | --- |
| 1 | 5 | 9 | 13 |
| 2 | 6 | 10 | 14 |
| 3 | 7 | 11 | 15 |
| 4 | 8 | 12 | 16 |

Macierz **M2**:

|  |  |  |  |
| --- | --- | --- | --- |
| 16 | 12 | 8 | 4 |
| 15 | 11 | 7 | 3 |
| 14 | 10 | 6 | 2 |
| 13 | 9 | 5 | 1 |

Suma: **M1** + **M2**

|  |  |  |  |
| --- | --- | --- | --- |
| 17 | 17 | 17 | 17 |
| 17 | 17 | 17 | 17 |
| 17 | 17 | 17 | 17 |
| 17 | 17 | 17 | 17 |

Suma: **M2** + **M1**

|  |  |  |  |
| --- | --- | --- | --- |
| 17 | 17 | 17 | 17 |
| 17 | 17 | 17 | 17 |
| 17 | 17 | 17 | 17 |
| 17 | 17 | 17 | 17 |

Transponowana macierz **M1**:

|  |  |  |  |
| --- | --- | --- | --- |
| 1 | 2 | 3 | 4 |
| 5 | 6 | 7 | 8 |
| 9 | 10 | 11 | 12 |
| 13 | 14 | 15 | 16 |

Wyznacznik **macierzy jednostkowej**: **1**

Wyznacznik macierzy **M1**: **0**

Macierz **M1** pomnożona przez **5** (skalar):

|  |  |  |  |
| --- | --- | --- | --- |
| 5 | 25 | 45 | 65 |
| 10 | 30 | 50 | 70 |
| 15 | 35 | 55 | 75 |
| 20 | 40 | 60 | 80 |

Macierz **M1** pomnożona przez macierz **M2**:

|  |  |  |  |
| --- | --- | --- | --- |
| 386 | 274 | 162 | 50 |
| 444 | 316 | 188 | 60 |
| 502 | 358 | 214 | 70 |
| 560 | 400 | 240 | 80 |

**Macierz jednostkowa** obrócona o **45 stopni** względem osi **X**:

|  |  |  |  |
| --- | --- | --- | --- |
| 1 | 0 | 0 | 0 |
| 0 | 0,707107 | -0,70711 | 0 |
| 0 | 0,707107 | 0,70711 | 0 |
| 0 | 0 | 0 | 1 |

**Macierz jednostkowa** obrócona o **45 stopni** względem osi **Y**:

|  |  |  |  |
| --- | --- | --- | --- |
| 0,70711 | 0 | 0,707107 | 0 |
| 0 | 1 | 0 | 0 |
| -0,70711 | 0 | 0,707107 | 0 |
| 0 | 0 | 0 | 1 |

**Macierz jednostkowa** obrócona o **45 stopni** względem osi **Z**:

|  |  |  |  |
| --- | --- | --- | --- |
| 0,707107 | -0,70711 | 0 | 0 |
| 0,707107 | 0,70711 | 0 | 0 |
| 0 | 0 | 1 | 0 |
| 0 | 0 | 0 | 1 |

Macierz **M3**:

|  |  |  |  |
| --- | --- | --- | --- |
| 56 | 34 | 111 | 24 |
| 232 | 121 | 65 | 87 |
| 57 | 56 | 78 | 100 |
| 635 | 389 | 34 | 55 |

**Odwrotność** macierzy **M3**:

|  |  |  |  |
| --- | --- | --- | --- |
| 0,000189 | 0,016477 | -0,01255 | -0,00334 |
| -0,000051 | -0,0278 | 0,019577 | 0,008405 |
| 0,010761 | -0,00136 | -0,00121 | -0,00034 |
| -0,008473 | 0,00724 | 0,007131 | -0,00254 |

Macierz **M3** pomnożona przez swoją **odwrotność**:

|  |  |  |  |
| --- | --- | --- | --- |
| 0,999999 | 0 | 0 | 0 |
| 0 | 0,999999 | 0 | 0 |
| 0 | 0 | 0,999999 | 0 |
| 0 | 0 | 0 | 0,999999 |