m1:

[ 1, 0, 0, 0]

[ 0, 1, 0, 0]

[ 0, 0, 1, 0]

[ 0, 0, 0, 1]

m2:

[ 7, -5, 1, 0]

[ 5, 3, -9, 0]

[ -5, 7, 3, 0]

[ 1, 15, 7, 0]

Result: m1 + m2

[ 8, -5, 1, 0]

[ 5, 4, -9, 0]

[ -5, 7, 4, 0]

[ 1, 15, 7, 1]

m1:

[ 1, 0, 0, 0]

[ 0, 1, 0, 0]

[ 0, 0, 1, 0]

[ 0, 0, 0, 1]

m2:

[ 7, -5, 1, 0]

[ 5, 3, -9, 0]

[ -5, 7, 3, 0]

[ 1, 15, 7, 0]

Result: m1 - m2

[ -6, 5, -1, 0]

[ -5, -2, 9, 0]

[ 5, -7, -2, 0]

[ -1, -15, -7, 1]

m2:

[ 7, -5, 1, 0]

[ 5, 3, -9, 0]

[ -5, 7, 3, 0]

[ 1, 15, 7, 0]

Result: m2 \* 2

[ 14, -10, 2, 0]

[ 10, 6, -18, 0]

[ -10, 14, 6, 0]

[ 2, 30, 14, 0]

m3:

[ 7.5, -5, 1, 0]

[ 5, 3.5, -9, 0]

[ -5, 7, 3.5, 0]

[ 1, 15, 7, 0.5]

Result: m3 / 2

[ 3.75, -2.5, 0.5, 0]

[ 2.5, 1.75, -4.5, 0]

[ -2.5, 3.5, 1.75, 0]

[ 0.5, 7.5, 3.5, 0.25]

BRAK PRZEMIENNOSCI MNOZENIA:

A:

[ 1, 3, 2, 1]

[ 2, 3, 2, 1]

[ 3, 3, 1, 1]

[ 3, 3, 1, 1]

B:

[ 3, 1, 4, 5]

[ 4, 2, 4, 4]

[ 5, 3, 1, 1]

[ 2, 1, 2, 2]

Result: A \* B

[ 27, 14, 20, 21]

[ 30, 15, 24, 26]

[ 28, 13, 27, 30]

[ 28, 13, 27, 30]

Result: B \* A

[ 32, 39, 17, 13]

[ 32, 42, 20, 14]

[ 17, 30, 18, 10]

[ 16, 21, 10, 7]

A:

[ 1, 3, 2, 1]

[ 2, 3, 2, 1]

[ 3, 3, 1, 1]

[ 3, 3, 1, 1]

det(A): 0

B:

[ 3, 1, 4, 5]

[ 4, 2, 4, 4]

[ 5, 3, 1, 1]

[ 2, 1, 2, 2]

det(B): 0

C:

[ 5, 11, 4, 5]

[ 4, 33, 4, 4]

[ 5, 3, 1, 2]

[ 2, 1, 2, 2]

det(C): 186

Inverse of C:

[ -0.333333, 0.0698925, 0.333333, 0.360215]

[ 0, 0.0322581, 0, -0.0645161]

[ -1, 0.274194, 0, 1.95161]

[ 1.33333, -0.360215, -0.333333, -1.77957]

C \* C^-1

[ 1, -0, 0, 0]

[ 0, 1, 0, 0]

[ 0, 0, 1, 0]

[ 0, 0, 0, 1]

m2:

[ 7, -5, 1, 0]

[ 5, 3, -9, 0]

[ -5, 7, 3, 0]

[ 1, 15, 7, 0]

Transpose:

[ 7, 5, -5, 1]

[ -5, 3, 7, 15]

[ 1, -9, 3, 7]

[ 0, 0, 0, 0]

Operacje zrealizowane na macierzy jednostkowej:

[ 1, 0, 0, 0]

[ 0, 1, 0, 0]

[ 0, 0, 1, 0]

[ 0, 0, 0, 1]

Translation Part:

[ 1, 0, 0, 1]

[ 0, 1, 0, 2]

[ 0, 0, 1, 3]

[ 0, 0, 0, 1]

Scale Part:

[ -3, 0, 0, 0]

[ 0, 2, 0, 0]

[ 0, 0, 1, 0]

[ 0, 0, 0, 1]

Scale Part Uniform:

[ 3, 0, 0, 0]

[ 0, 3, 0, 0]

[ 0, 0, 3, 0]

[ 0, 0, 0, 1]

Rotation X (90 stopni):

[ 1, 0, 0, 0]

[ 0, 0, -1, 0]

[ 0, 1, 0, 0]

[ 0, 0, 0, 1]

Rotation Y (90 stopni):

[ 0, 0, 1, 0]

[ 0, 1, 0, 0]

[ -1, 0, 0, 0]

[ 0, 0, 0, 1]

Rotation Z (90 stopni):

[ 0, -1, 0, 0]

[ 1, 0, 0, 0]

[ 0, 0, 1, 0]

[ 0, 0, 0, 1]

Rotation Axis (90 stopni):

axis: [ 1, 2, -1]

Result:

[ 0.166667, 0.741582, 0.64983, 0]

[ -0.074915, 0.666667, -0.741582, 0]

[ -0.983163, 0.074915, 0.166667, 0]

[ 0, 0, 0, 1]

Obrot wektora: [ 1, 0, 0, 1]

macierz obrotu:

[ 0, 0, 1, 0]

[ 0, 1, 0, 0]

[ -1, 0, 0, 0]

[ 0, 0, 0, 1]

WYNIK: [ 0, 0, -1, 1]