```
So luong he truc toa do: 11
n =
   11
He truc so Chuyen vi cua he truc, 0/1 (0:Tinh tien, 1:Quay)1
C =
    1 1 0 1 0 0 1 0 0
Quay quanh tuc nao x/y/z: y
Q =
Gia tri quay quanh truc: t1
t =
t1
T =
[\cos(t1), 0, \sin(t1), 0]
      0, 1,
              0, 0]
[-\sin(t1), 0, \cos(t1), 0]
      0, 0,
             0, 1]
He truc so Chuyen vi cua he truc, 0/1 (0:Tinh tien, 1:Quay)0
C =
    1 0 0 1 0 0 1 0 0
Dich chuyen theo truc x : 11
dx =
11
Dich chuyen theo truc y : 0
dy =
    0
```

```
Dich chuyen theo truc z : 0
dz =
0
[\cos(t1), 0, \sin(t1), 11*\cos(t1)]
      0, 1, 0,
[-\sin(t1), 0, \cos(t1), -11*\sin(t1)]
[ 0, 0, 0,
                        11
He truc so Chuyen vi cua he truc, 0/1 (0:Tinh tien, 1:Quay)0
C =
    1 0 0 1 0 0 1 0 0
Dich chuyen theo truc x : 0
dx =
0
Dich chuyen theo truc y : 12
dy =
12
Dich chuyen theo truc z: 0
dz =
  0
T =
[\cos(t1), 0, \sin(t1), 11*\cos(t1)]
[ 0, 1, 0,
[-\sin(t1), 0, \cos(t1), -11*\sin(t1)]
[ 0, 0, 0,
He truc so Chuyen vi cua he truc, 0/1 (0:Tinh tien, 1:Quay)1
```

```
C =
    1 0 0 1 0 0 1 0 0
Quay quanh tuc nao x/y/z: z
Q =
Gia tri quay quanh truc: t2
t =
t2
T =
[\cos(t1) \cos(t2), -\cos(t1) \sin(t2), \sin(t1), 11 \cos(t1)]
[ \sin(t2), \cos(t2), 0,
[-\cos(t2)*\sin(t1), \sin(t1)*\sin(t2), \cos(t1), -11*\sin(t1)]
              Ο,
                             Ο,
                                0,
He truc so Chuyen vi cua he truc, 0/1 (0:Tinh tien, 1:Quay)0
C =
   1 0 0 1 0 0 1 0 0
Dich chuyen theo truc x : 0
dx =
    0
Dich chuyen theo truc y : 13
dy =
13
Dich chuyen theo truc z : 0
dz =
    0
```

```
T =
 [\cos(t1) \cdot \cos(t2), -\cos(t1) \cdot \sin(t2), \sin(t1), 11 \cdot \cos(t1) - 13 \cdot \cos(t1) \cdot \sin(t2)]
                                                        sin(t2),
                                                                                                                                                   cos(t2),
                                                                                                                                                                                                                               Ο,
                                                                                                                                                                                                                                                                                                                                12 + 13*\cos(t2)
[-\cos(t^2) \cdot \sin(t^2), \sin(t^2), \cos(t^2), \cos(t^2), \sin(t^2) \cdot \sin(t^2) - 11 \cdot \sin(t^2)]
                                                                                                                                                                                Ο,
                                                                                                                                                                                                                            0,
                                                                                                                                                                                                                                                                                                                                                                                                        1]
He truc so Chuyen vi cua he truc, 0/1 (0:Tinh tien, 1:Quay)1
C =
                                   0 0 1 0 1 1 0 0
Quay quanh tuc nao x/y/z: z
Q =
Z
Gia tri quay quanh truc: t3
t =
t3
T =
[\cos(t1) \cdot \cos(t2) \cdot \cos(t3) - \cos(t1) \cdot \sin(t2) \cdot \sin(t3), - \cos(t1) \cdot \cos(t2) \cdot \sin(t3) - \cos(t3) \cdot \cos(
 (t1)*\cos(t3)*\sin(t2), \sin(t1), 11*\cos(t1) - 13*\cos(t1)*\sin(t2)]
                                                                                           cos(t2)*sin(t3) + cos(t3)*sin(t2),
                                                                                                                                                                                                                                                                                                                                                                         cos(t2)*co≰
                                                                                                                                                                                                                                                         12 + 13*\cos(t2)
 (t3) - \sin(t2) * \sin(t3),
                                                                                                                                                Ο,
[\sin(t1)*\sin(t2)*\sin(t3) - \cos(t2)*\cos(t3)*\sin(t1), \cos(t2)*\sin(t1)*\sin(t3) + \cos x
 (t3) * sin(t1) * sin(t2), cos(t1), 13* sin(t1) * sin(t2) - 11* sin(t1)]
[
Ο,
                                    0,
                                                                                                                                                                                                                      11
He truc so Chuyen vi cua he truc, 0/1 (0:Tinh tien, 1:Quay)0
C =
                                           0 0 1 0 1 0 0
Dich chuyen theo truc x : 0
dx =
                         0
```

```
Dich chuyen theo truc y : 14
dy =
14
Dich chuyen theo truc z : 0
dz =
T =
[\cos(t1) \cdot \cos(t2) \cdot \cos(t3) - \cos(t1) \cdot \sin(t2) \cdot \sin(t3), - \cos(t1) \cdot \cos(t2) \cdot \sin(t3) - \cos(t3)]
  (t1) * cos(t3) * sin(t2), sin(t1), l1* cos(t1) - l4* (cos(t1) * cos(t2) * sin(t3) + cos(t1) * cos(t3) * sin(t3) + cos(t3) + cos(t3) * sin(t3) + cos(t3) + 
 (t3)*sin(t2)) - 13*cos(t1)*sin(t2)]
Γ
                                                                                                                           cos(t2)*sin(t3) + cos(t3)*sin(t2),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         cos(t2)*co≰
 (t3) - \sin(t2) * \sin(t3),
                                                                                                                                                                                                                                                                                                                                                                                                                                                               12 + 14*(cos(t2)*cog
                                                                                                                                                                                                            Ο,
 (t3) - \sin(t2)*\sin(t3)) + 13*\cos(t2)
[\sin(t1)*\sin(t2)*\sin(t3) - \cos(t2)*\cos(t3)*\sin(t1), \cos(t2)*\sin(t1)*\sin(t3) + \cos(t3)
  (t3) * \sin(t1) * \sin(t2), \cos(t1), 14 * (\cos(t2) * \sin(t1) * \sin(t3) + \cos(t3) * \sin(t1) * \sin(t2) \rlap/ (t3) * \sin(t3) + \cos(t3) * \sin(t3) * 
-11*\sin(t1) + 13*\sin(t1)*\sin(t2)
[
                                                                                                                                                                                                                                                                                                                                                        0,4
                                                            0, 4
0,
1]
He truc so Chuyen vi cua he truc, 0/1 (0:Tinh tien, 1:Quay)1
C =
                                  1 0 0 1 0 1 0 1
Quay quanh tuc nao x/y/z: z
Q =
Z
Gia tri quay quanh truc: t4
t =
t4
T =
```

```
[-\cos(t4)*(\cos(t1)*\sin(t2)*\sin(t3) - \cos(t1)*\cos(t2)*\cos(t3)) - \sin(t4)*(\cos(t1))
(t2) \cdot \sin(t3) + \cos(t1) \cdot \cos(t3) \cdot \sin(t2), \sin(t4) \cdot (\cos(t1) \cdot \sin(t2) \cdot \sin(t3) - \cos(t3)
(t1) * \cos(t2) * \cos(t3) * - \cos(t4) * (\cos(t1) * \cos(t2) * \sin(t3) + \cos(t1) * \cos(t3) * \sin(t2)) 
\sin(t1), 11*\cos(t1) - 14*(\cos(t1)*\cos(t2)*\sin(t3) + \cos(t1)*\cos(t3)*\sin(t2)) - 13*\cos(t3)
(t1) * sin(t2) 
                                           \cos(t4)*(\cos(t2)*\sin(t3) + \cos(t3)*\sin(t2)) + \sin(t3)
(t4)*(\cos(t2)*\cos(t3) - \sin(t2)*\sin(t3)),
(\cos(t2)*\cos(t3) - \sin(t2)*\sin(t3)) - \sin(t4)*(\cos(t2)*\sin(t3) + \cos(t3)*\sin(t2))
0,
                                         12 + 14*(\cos(t2)*\cos(t3) - \sin(t2)*\sin(t3)) 
13*cos(t2)]
    \cos(t4)*(\sin(t1)*\sin(t2)*\sin(t3) - \cos(t2)*\cos(t3)*\sin(t1)) + \sin(t4)*(\cos(t2)*\cos(t3)*\sin(t3))
*sin(t1)*sin(t3) + cos(t3)*sin(t1)*sin(t2)), cos(t4)*(cos(t2)*sin(t1)*sin(t3) + cos
(t3) * \sin(t1) * \sin(t2)) - \sin(t4) * (\sin(t1) * \sin(t2) * \sin(t3) - \cos(t2) * \cos(t3) * \sin(t1)) \checkmark
\cos(t1), 14*(\cos(t2)*\sin(t1)*\sin(t3) + \cos(t3)*\sin(t1)*\sin(t2)) - 11*\sin(t1) + 13*sim(t3)
(t1)*sin(t2)
[ 🗹
0, ∠
          0, 4
Ο,
1]
He truc so Chuyen vi cua he truc, 0/1 (0:Tinh tien, 1:Quay)0
C =
           0
                  0 1 0
                                        1
                                               0
Dich chuyen theo truc x : 0
dx =
     0
Dich chuyen theo truc y : 15
dy =
15
Dich chuyen theo truc z : 0
dz =
      0
T =
[-\cos(t4)*(\cos(t1)*\sin(t2)*\sin(t3) - \cos(t1)*\cos(t2)*\cos(t3)) - \sin(t4)*(\cos(t1)*\cos(t3))]
(t2) \cdot \sin(t3) + \cos(t1) \cdot \cos(t3) \cdot \sin(t2), \sin(t4) \cdot (\cos(t1) \cdot \sin(t2) \cdot \sin(t3) - \cos(t3)
```

```
(t1) * cos(t2) * cos(t3)  - cos(t4) * (cos(t1) * cos(t2) * sin(t3) + cos(t1) * cos(t3) * sin(t2)) 
\sin(t1), 11*\cos(t1) - 15*(\cos(t4)*(\cos(t1)*\cos(t2)*\sin(t3) + \cos(t1)*\cos(t3)*\sin(t2)
-\sin(t4)*(\cos(t1)*\sin(t2)*\sin(t3) - \cos(t1)*\cos(t2)*\cos(t3))) - 14*(\cos(t1)*\cos(t2)
*\sin(t3) + \cos(t1)*\cos(t3)*\sin(t2) - 13*\cos(t1)*\sin(t2)
                                                                                    \cos(t4)*(\cos(t2)*\sin(t3) + \cos(t3)*\sin(t2)) + \sin(t3)
Γ
(t4)*(\cos(t2)*\cos(t3) - \sin(t2)*\sin(t3)),
                                                                                                                                                                             cos(t4) ≰
(\cos(t2)*\cos(t3) - \sin(t2)*\sin(t3)) - \sin(t4)*(\cos(t2)*\sin(t3) + \cos(t3)*\sin(t2))
0,
                                                                                                                                                             12 + 14*(\cos(t2))
(t3) - \sin(t2) \cdot \sin(t3) + 13 \cdot \cos(t2) + 15 \cdot (\cos(t4) \cdot (\cos(t2) \cdot \cos(t3) - \sin(t2) \cdot \sin(t2) \cdot \sin(t3))
(t3)) - sin(t4)*(cos(t2)*sin(t3) + cos(t3)*sin(t2)))]
       \cos(t4)*(\sin(t1)*\sin(t2)*\sin(t3) - \cos(t2)*\cos(t3)*\sin(t1)) + \sin(t4)*(\cos(t2)*\cos(t3)*\sin(t3))
*\sin(t1)*\sin(t3) + \cos(t3)*\sin(t1)*\sin(t2)), \cos(t4)*(\cos(t2)*\sin(t1)*\sin(t3) + \cos(t3)
(t3) * \sin(t1) * \sin(t2)  - \sin(t4) * (\sin(t1) * \sin(t2) * \sin(t3)  - \cos(t2) * \cos(t3) * \sin(t1)) 
\cos(t1), 14*(\cos(t2)*\sin(t1)*\sin(t3) + \cos(t3)*\sin(t1)*\sin(t2)) + 15*(\cos(t4)*(\cos(t4))
(t2) * \sin(t1) * \sin(t3) + \cos(t3) * \sin(t1) * \sin(t2)) - \sin(t4) * (\sin(t1) * \sin(t2) * \sin(t3) 
cos(t2)*cos(t3)*sin(t1))) - 11*sin(t1) + 13*sin(t1)*sin(t2)]
0, K
                     0, 4
Ο,
1]
He truc so Chuyen vi cua he truc, 0/1 (0:Tinh tien, 1:Quay)1
C =
                                   0 1
                                                          0
                                                                              1
                                                                                               0
                                                                                                          1
Quay quanh tuc nao x/y/z: y
0 =
У
Gia tri quay quanh truc: t5
t =
t5
T =
[-\sin(t1)*\sin(t5) - \cos(t5)*(\cos(t4)*(\cos(t1)*\sin(t2)*\sin(t3) - \cos(t1)*\cos(t2)*\cos(t3)]
(t3)) + \sin(t4)*(\cos(t1)*\cos(t2)*\sin(t3) + \cos(t1)*\cos(t3)*\sin(t2))), \sin(t4)*(\cos(t3))
(t1) * \sin(t2) * \sin(t3) - \cos(t1) * \cos(t2) * \cos(t3) - \cos(t4) * (\cos(t1) * \cos(t2) * \sin(t3) 
\cos(t1) * \cos(t3) * \sin(t2)), \cos(t5) * \sin(t1) - \sin(t5) * (\cos(t4) * (\cos(t1) * \sin(t2) * \sin(t3) * (\cos(t1) * \cos(t3) * (\cos(t1) * (\cos(t1) * \cos(t3) * (\cos(t1) * (\cos(t1) * \cos(t3) * (\cos(t1) * (oos(t1) *
- cos(t1)*cos(t2)*cos(t3)) + sin(t4)*(cos(t1)*cos(t2)*sin(t3) + cos(t1)*cos(t3)*si≰
(t2)), 11*\cos(t1) - 15*(\cos(t4)*(\cos(t1)*\cos(t2)*\sin(t3) + \cos(t1)*\cos(t3)*\sin(t2))
-\sin(t4)*(\cos(t1)*\sin(t2)*\sin(t3) - \cos(t1)*\cos(t2)*\cos(t3))) - 14*(\cos(t1)*\cos(t2)*
```

```
*\sin(t3) + \cos(t1)*\cos(t3)*\sin(t2) - 13*\cos(t1)*\sin(t2)
                                                                                                                                                    cos(t5) * (cos(t4) * (cos(t2) *si≰
(t3) + \cos(t3) \cdot \sin(t2) + \sin(t4) \cdot (\cos(t2) \cdot \cos(t3) - \sin(t2) \cdot \sin(t3))) \not
\cos(t4)*(\cos(t2)*\cos(t3) - \sin(t2)*\sin(t3)) - \sin(t4)*(\cos(t2)*\sin(t3) + \cos(t3)*\sin(t3)
(t2)),
                                                                                                                                                           \sin(t5)*(\cos(t4)*(\cos(t2))
*\sin(t3) + \cos(t3)*\sin(t2)) + \sin(t4)*(\cos(t2)*\cos(t3) - \sin(t2)*\sin(t3)))
12 + 14*(\cos(t2)*\cos(t3) - \sin(t2)*\sin(t3)) + 13*\cos(t2) + 15*(\cos(t4)*(\cos(t2)*\cos(t3))
(t3) - \sin(t2) \cdot \sin(t3) - \sin(t4) \cdot (\cos(t2) \cdot \sin(t3) + \cos(t3) \cdot \sin(t2))
          \cos(t5)*(\cos(t4)*(\sin(t1)*\sin(t2)*\sin(t3) - \cos(t2)*\cos(t3)*\sin(t1)) + \sin(t4)
(\cos(t2)*\sin(t1)*\sin(t3) + \cos(t3)*\sin(t1)*\sin(t2))) - \cos(t1)*\sin(t5), \cos(t4)*(\cos(t3))
(t2) *sin(t1) *sin(t3) + cos(t3) *sin(t1) *sin(t2)) - sin(t4) * (sin(t1) *sin(t2) *sin(t3) ≰
\cos(t2) * \cos(t3) * \sin(t1)), \cos(t1) * \cos(t5) + \sin(t5) * (\cos(t4) * (\sin(t1) * \sin(t2) * \sin(t3) * (\cos(t4) * (oos(t4) * (
-\cos(t^2)\cos(t^3)\sin(t^1) + \sin(t^4)\cos(t^2)\sin(t^1)\sin(t^3) + \cos(t^3)\sin(t^1)\sin(t^2)
(t2)), 14*(\cos(t2)*\sin(t1)*\sin(t3) + \cos(t3)*\sin(t1)*\sin(t2)) + 15*(\cos(t4)*(\cos(t2))
*\sin(t1)*\sin(t3) + \cos(t3)*\sin(t1)*\sin(t2)) - \sin(t4)*(\sin(t1)*\sin(t2)*\sin(t3) - \cos x
(t2)*\cos(t3)*\sin(t1))) - 11*\sin(t1) + 13*\sin(t1)*\sin(t2)]
0, 4
0, 4
0, 4
1]
He truc so Chuyen vi cua he truc, 0/1 (0:Tinh tien, 1:Quay)0
C =
     Columns 1 through 10
                                                     1 0 1 0 1
     Column 11
             0
Dich chuyen theo truc x : 16
dx =
16
Dich chuyen theo truc y : 0
dy =
             0
Dich chuyen theo truc z : 0
dz =
```

0

[

```
T =
 [-\sin(t1)*\sin(t5) - \cos(t5)*(\cos(t4)*(\cos(t1)*\sin(t2)*\sin(t3) - \cos(t1)*\cos(t2)*\cos(t3)]
 (t3)) + sin(t4)*(cos(t1)*cos(t2)*sin(t3) + <math>cos(t1)*cos(t3)*sin(t2))), sin(t4)*(cos(t3))*sin(t4)*(cos(t3))*sin(t4)*(cos(t3))*sin(t4)*(cos(t3))*sin(t4)*(cos(t3))*sin(t4)*(cos(t3))*sin(t4)*(cos(t3))*sin(t4)*(cos(t3))*sin(t4)*(cos(t3))*sin(t4)*(cos(t3))*sin(t4)*(cos(t3))*sin(t4)*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(cos(t4))*(co
 (t1) * \sin(t2) * \sin(t3) - \cos(t1) * \cos(t2) * \cos(t3)) - \cos(t4) * (\cos(t1) * \cos(t2) * \sin(t3) *
\cos(t1) * \cos(t3) * \sin(t2)), \cos(t5) * \sin(t1) - \sin(t5) * (\cos(t4) * (\cos(t1) * \sin(t2) * \sin(t3) * \cos(t3) * \sin(t3) * \cos(t3) * \sin(t3) * \sin(t3) * \cos(t3) * \sin(t3) * \sin(t3) * \cos(t3) * 
-\cos(t1)*\cos(t2)*\cos(t3)) + \sin(t4)*(\cos(t1)*\cos(t2)*\sin(t3) + \cos(t1)*\cos(t3)*\sin(t3)
 (t2)), 11*\cos(t1) - 14*(\cos(t1)*\cos(t2)*\sin(t3) + \cos(t1)*\cos(t3)*\sin(t2)) - 15*(\cos t - t2)
 (t4)*(cos(t1)*cos(t2)*sin(t3) + cos(t1)*cos(t3)*sin(t2)) - sin(t4)*(cos(t1)*sin(t2)*
*\sin(t3) - \cos(t1)*\cos(t2)*\cos(t3)) - 16*(\sin(t1)*\sin(t5) + \cos(t5)*(\cos(t4)*(\cos(t3)))
 (t1) * \sin(t2) * \sin(t3) - \cos(t1) * \cos(t2) * \cos(t3)) + \sin(t4) * (\cos(t1) * \cos(t2) * \sin(t3)) 
cos(t1)*cos(t3)*sin(t2)))) - 13*cos(t1)*sin(t2)]
                                                                                                                                                                                                                   \cos(t5)*(\cos(t4)*(\cos(t2)*\sin
 (t3) + \cos(t3) \cdot \sin(t2) + \sin(t4) \cdot (\cos(t2) \cdot \cos(t3) - \sin(t2) \cdot \sin(t3))) \kappa
\cos(t4)*(\cos(t2)*\cos(t3) - \sin(t2)*\sin(t3)) - \sin(t4)*(\cos(t2)*\sin(t3) + \cos(t3)*\sin(t3)
                                                                                                                                                                                                                               \sin(t5)*(\cos(t4)*(\cos(t2))
*sin(t3) + cos(t3)*sin(t2)) + sin(t4)*(cos(t2)*cos(t3) - sin(t2)*sin(t3))) \( \mathcal{F} \)
12 + 14*(\cos(t2)*\cos(t3) - \sin(t2)*\sin(t3)) + 13*\cos(t2) + 15*(\cos(t4)*(\cos(t2)*\cos(t3))
 (t3) - \sin(t2) \cdot \sin(t3) - \sin(t4) \cdot (\cos(t2) \cdot \sin(t3) + \cos(t3) \cdot \sin(t2)) + 16 \cdot \cos(t5) 
 (\cos(t4)*(\cos(t2)*\sin(t3) + \cos(t3)*\sin(t2)) + \sin(t4)*(\cos(t2)*\cos(t3) - \sin(t2)*\sin(t2))
 (t3)))]
               \cos(t5)*(\cos(t4)*(\sin(t1)*\sin(t2)*\sin(t3) - \cos(t2)*\cos(t3)*\sin(t1)) + \sin(t4)
 (\cos(t2)*\sin(t1)*\sin(t3) + \cos(t3)*\sin(t1)*\sin(t2)) - \cos(t1)*\sin(t5), \cos(t4)*(\cos t2)
(t2) * \sin(t1) * \sin(t3) + \cos(t3) * \sin(t1) * \sin(t2)) - \sin(t4) * (\sin(t1) * \sin(t2) * \sin(t3) 
\cos(t^2) \cdot \cos(t^3) \cdot \sin(t^1), \cos(t^1) \cdot \cos(t^3) + \sin(t^3) \cdot (\cos(t^4) \cdot (\sin(t^1) \cdot \sin(t^2) \cdot \sin(t^3))
- cos(t2)*cos(t3)*sin(t1)) + sin(t4)*(cos(t2)*sin(t1)*sin(t3) + cos(t3)*sin(t1)*six(t1)*six(t2)*sin(t3)*sin(t3)*sin(t1)*six(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t3)*sin(t
 (t2))), 14*(cos(t2)*sin(t1)*sin(t3) + cos(t3)*sin(t1)*sin(t2)) - 16*(cos(t1)*sin(t5)€
-\cos(t5)*(\cos(t4)*(\sin(t1)*\sin(t2)*\sin(t3) - \cos(t2)*\cos(t3)*\sin(t1)) + \sin(t4)*(\cos(t3)*\sin(t3))
(t2) * \sin(t1) * \sin(t3) + \cos(t3) * \sin(t1) * \sin(t2)))) + 15* (\cos(t4) * (\cos(t2) * \sin(t1) * \sin(t1) * \sin(t2)))
 (t3) + \cos(t3) * \sin(t1) * \sin(t2) - \sin(t4) * (\sin(t1) * \sin(t2) * \sin(t3) - \cos(t2) * \cos(t3) *
*\sin(t1))) - 11*\sin(t1) + 13*\sin(t1)*\sin(t2)]
[ K
0, ∠
0, 4
0, 4
1]
ans =
               \cos(t^2 + t^3 + t^4) \cos(t^1) \cos(t^5) - \sin(t^1) \sin(t^5), -\sin(t^2 + t^3 + t^4) \cos(t^1) 
\cos(t5) \cdot \sin(t1) + \cos(t2 + t3 + t4) \cdot \cos(t1) \cdot \sin(t5), 11 \cdot \cos(t1) - 14 \cdot \sin(t2 + t3) \cdot \cos(t1)
(t1) - 13*\cos(t1)*\sin(t2) - 16*\sin(t1)*\sin(t5) - 15*\sin(t2 + t3 + t4)*\cos(t1) 
16*\cos(t2 + t3 + t4)*\cos(t1)*\cos(t5)
```

 $\sin(t2 + t3 + t4) * \cos(t5)$,

 $\cos(t2 + t3 + t4)$ ¥