```
So luong he truc toa do: 8

n =

     8

He truc so Chuyen vi cua he truc, 0/1 (0:Tinh tien, 1:Quay)0

C =

     0     1     0     1     0     1     0     1     0

Dich chuyen theo truc x : 0

dx =

     0

Dich chuyen theo truc y : 0

dy =

     0

Dich chuyen theo truc z : l1

dz =

l1


T =

[ 1, 0, 0,  0]
[ 0, 1, 0,  0]
[ 0, 0, 1, l1]
[ 0, 0, 0,  1]

He truc so Chuyen vi cua he truc, 0/1 (0:Tinh tien, 1:Quay)1

C =

     0     1     0     1     0     1     0     1     0

Quay quanh tuc nao x/y/z: z

Q =

z
```

```
Gia tri quay quanh truc: t1

t =

t1


T =

[ cos(t1), -sin(t1), 0,  0]
[ sin(t1),  cos(t1), 0,  0]
[       0,        0, 1, l1]
[       0,        0, 0,  1]

He truc so Chuyen vi cua he truc, 0/1 (0:Tinh tien, 1:Quay)0

C =

     0     1     0     1     0     1     0     1     0

Dich chuyen theo truc x : 0

dx =

     0

Dich chuyen theo truc y : l4

dy =

l4

Dich chuyen theo truc z : l2

dz =

l2


T =

[ cos(t1), -sin(t1), 0, -l4*sin(t1)]
[ sin(t1),  cos(t1), 0,  l4*cos(t1)]
[       0,        0, 1,     l1 + l2]
[       0,        0, 0,           1]

He truc so Chuyen vi cua he truc, 0/1 (0:Tinh tien, 1:Quay)1
```

```
C =

     0     1     0     1     0     1     0     1     0

Quay quanh tuc nao x/y/z: z

Q =

z

Gia tri quay quanh truc: t2

t =

t2


T =

[ cos(t1)*cos(t2) - sin(t1)*sin(t2), - cos(t1)*sin(t2) - cos(t2)*sin(t1), 0, -l4*sin
(t1)]
[ cos(t1)*sin(t2) + cos(t2)*sin(t1),   cos(t1)*cos(t2) - sin(t1)*sin(t2), 0,  l4*cos
(t1)]
[                                 0,                                     0, 1,     l1
l2]
[                                 0,                                     0, 0,
1]

He truc so Chuyen vi cua he truc, 0/1 (0:Tinh tien, 1:Quay)0

C =

     0     1     0     1     0     1     0     1     0

Dich chuyen theo truc x : 0

dx =

     0

Dich chuyen theo truc y : l5

dy =

l5

Dich chuyen theo truc z : l3

dz =
```

```
l3


T =

[ cos(t1)*cos(t2) - sin(t1)*sin(t2), - cos(t1)*sin(t2) - cos(t2)*sin(t1), 0, - l5↵
(cos(t1)*sin(t2) + cos(t2)*sin(t1)) - l4*sin(t1)]
[ cos(t1)*sin(t2) + cos(t2)*sin(t1),   cos(t1)*cos(t2) - sin(t1)*sin(t2), 0,   l5↵
(cos(t1)*cos(t2) - sin(t1)*sin(t2)) + l4*cos(t1)]
[                                 0,                                   0, 1↵
l1 + l2 + l3]
[                                 0,                                   0, 0↵
1]

He truc so Chuyen vi cua he truc, 0/1 (0:Tinh tien, 1:Quay)0

C =

     0     1     0     1     0     0     0     1     0

Dich chuyen theo truc x : 0

dx =

     0

Dich chuyen theo truc y : 0

dy =

     0

Dich chuyen theo truc z : -l6

dz =

-l6


T =

[ cos(t1)*cos(t2) - sin(t1)*sin(t2), - cos(t1)*sin(t2) - cos(t2)*sin(t1), 0, - l5↵
(cos(t1)*sin(t2) + cos(t2)*sin(t1)) - l4*sin(t1)]
[ cos(t1)*sin(t2) + cos(t2)*sin(t1),   cos(t1)*cos(t2) - sin(t1)*sin(t2), 0,   l5↵
(cos(t1)*cos(t2) - sin(t1)*sin(t2)) + l4*cos(t1)]
[                                 0,                                   0, 1↵
l1 + l2 + l3 - l6]
[                                 0,                                   0, 0↵
```

```
1]

He truc so Chuyen vi cua he truc, 0/1 (0:Tinh tien, 1:Quay)1

C =

     0     1     0     1     0     0     1     1     0

Quay quanh tuc nao x/y/z: z

Q =

z

Gia tri quay quanh truc: t3

t =

t3


T =

[ cos(t3)*(cos(t1)*cos(t2) - sin(t1)*sin(t2)) - sin(t3)*(cos(t1)*sin(t2) + cos(t2↙
*sin(t1)), - cos(t3)*(cos(t1)*sin(t2) + cos(t2)*sin(t1)) - sin(t3)*(cos(t1)*cos(t2) ↙
sin(t1)*sin(t2)), 0, - l5*(cos(t1)*sin(t2) + cos(t2)*sin(t1)) - l4*sin(t1)]
[ cos(t3)*(cos(t1)*sin(t2) + cos(t2)*sin(t1)) + sin(t3)*(cos(t1)*cos(t2) - sin(t1↙
*sin(t2)),   cos(t3)*(cos(t1)*cos(t2) - sin(t1)*sin(t2)) - sin(t3)*(cos(t1)*sin(t2) ↙
cos(t2)*sin(t1)), 0,   l5*(cos(t1)*cos(t2) - sin(t1)*sin(t2)) + l4*cos(t1)]
[↙
0,↙
0, 1,                                    l1 + l2 + l3 - l6]
[↙
0,↙
0, 0,                                                   1]

He truc so Chuyen vi cua he truc, 0/1 (0:Tinh tien, 1:Quay)0

C =

     0     1     0     1     0     0     1     0     0

Dich chuyen theo truc x : 0

dx =

     0

Dich chuyen theo truc y : 0
```

```
dy =

     0

Dich chuyen theo truc z : -l7

dz =

-l7


T =

[ cos(t3)*(cos(t1)*cos(t2) - sin(t1)*sin(t2)) - sin(t3)*(cos(t1)*sin(t2) + cos(t2↙
*sin(t1)), - cos(t3)*(cos(t1)*sin(t2) + cos(t2)*sin(t1)) - sin(t3)*(cos(t1)*cos(t2) ↙
sin(t1)*sin(t2)), 0, - l5*(cos(t1)*sin(t2) + cos(t2)*sin(t1)) - l4*sin(t1)]
[ cos(t3)*(cos(t1)*sin(t2) + cos(t2)*sin(t1)) + sin(t3)*(cos(t1)*cos(t2) - sin(t1↙
*sin(t2)),   cos(t3)*(cos(t1)*cos(t2) - sin(t1)*sin(t2)) - sin(t3)*(cos(t1)*sin(t2) ↙
cos(t2)*sin(t1)), 0,   l5*(cos(t1)*cos(t2) - sin(t1)*sin(t2)) + l4*cos(t1)]
[↙
0,↙
0, 1,                                l1 + l2 + l3 - l6 - l7]
[↙
0,↙
0, 0,                                                    1]


ans =

[ cos(t1 + t2 + t3), -sin(t1 + t2 + t3), 0, - l5*sin(t1 + t2) - l4*sin(t1)]
[ sin(t1 + t2 + t3),  cos(t1 + t2 + t3), 0,   l5*cos(t1 + t2) + l4*cos(t1)]
[                 0,                  0, 1,         l1 + l2 + l3 - l6 - l7]
[                 0,                  0, 0,                              1]

>>
```