```
close all
clear

tr= stlread('part1.stl')
```

```
tr =
  triangulation のプロパティ:

            Points: [4145×3 double]
    ConnectivityList: [8286×3 double]
```

```
p=tr.Points
```

```
p = 4145×3
   -3.5000   58.6240  -80.2178
  -17.5000   59.8250  -78.2696
   -2.5000   58.0842  -79.2224
   -6.7559   58.0256  -77.8561
   -2.5000   57.4600  -77.9983
   -6.7559   57.2936  -76.7206
   -2.5000   56.6929  -76.8576
   -6.7559   56.4094  -75.7001
   -2.5000   56.2496  -76.3377
   -2.5000   55.8481  -75.9463
      ⋮
```

```
j=1
```

```
j = 1
```

```
pj=p(j,:)
```

```
pj = 1×3
   -3.5000   58.6240  -80.2178
```

```
figure
scatter3(pj(:,1),pj(:,2),pj(:,3),'filled')
axis('equal')
xlabel('X')
ylabel('Y')
zlabel('Z')

t=pi/3
```

```
t = 1.0472
```

```
rz=[cos(t), -sin(t),0;
   sin(t),cos(t),0 ;
   0,0,1]
```

```
rz = 3×3
    0.5000   -0.8660         0
```

```
    0.8660    0.5000         0
         0         0    1.0000
```

```
rx=[1,0,0;
    0,cos(t),-sin(t);
    0,sin(t),cos(t)]
```

```
rx = 3×3
    1.0000         0         0
         0    0.5000   -0.8660
         0    0.8660    0.5000
```

```
ry=[cos(t),0,-sin(t);
    0,1,0;
    sin(t),0,cos(t)]
```

```
ry = 3×3
    0.5000         0   -0.8660
         0    1.0000         0
    0.8660         0    0.5000
```

```
rp=rz*(pj.')
```

```
rp = 3×1
  -52.5199
   26.2809
  -80.2178
```

```
np=zeros(size(p))
```

```
np = 4145×3
     0     0     0
     0     0     0
     0     0     0
     0     0     0
     0     0     0
     0     0     0
     0     0     0
     0     0     0
     0     0     0
     0     0     0
     ⋮
```

```
i=1
```

```
i = 1
```

```
np(i,1)=rp(1)
```

```
np = 4145×3
  -52.5199         0         0
         0         0         0
         0         0         0
```

```
         0         0         0
         0         0         0
         0         0         0
         0         0         0
         0         0         0
         0         0         0
         0         0         0
    ⋮
```

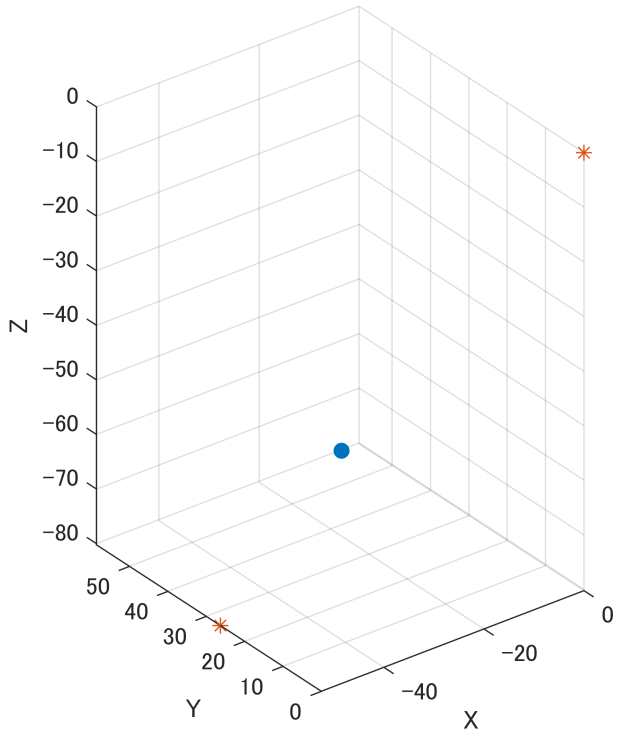
```
np(i,2)=rp(2)
```

```
np = 4145×3
  -52.5199   26.2809         0
         0         0         0
         0         0         0
         0         0         0
         0         0         0
         0         0         0
         0         0         0
         0         0         0
         0         0         0
         0         0         0
    ⋮
```

```
np(i,3)=rp(3)
```

```
np = 4145×3
  -52.5199   26.2809  -80.2178
         0         0         0
         0         0         0
         0         0         0
         0         0         0
         0         0         0
         0         0         0
         0         0         0
         0         0         0
         0         0         0
    ⋮
```

```
hold on
scatter3(np(:,1),np(:,2),np(:,3),'*')
```


0
−10
−20
−30
−40
−50
−60
−70
−80
Z
50
40
30
20
10
0
Y
0
−20
−40
X