

```

a = {3, 3, -4, 1};
b = {5, 3, -4, 1};
c = {5, 5, -4, 1};
d = {3, 5, -4, 1};
aPrime = {3, 3, -6, 1};
bPrime = {5, 3, -6, 1};
cPrime = {5, 5, -6, 1};
dPrime = {3, 5, -6, 1};
d2Prime = {8, 8, -6, 1};
Wxmin = {2, 3, 1};
Wxmax = {5, 3, 1};
Hymin = {3, 2, 1};
Hymax = {3, 5, 1};
WorldPoints = {a, b, c, d, aPrime, bPrime, cPrime, dPrime, d2Prime};
Oc = {0, 0, 0, 1};
zeta1 = -1;
zeta2 = -1;
alpha = 10;
beta = -10;
Oc2 = {6, 0, 0, 1};
Rot2 = RotationsE2[alpha];
Rot1 = RotationsE2[beta];
ObjectSize = b[[1]] - a[[1]];
A = {{1, 0, 0, 0}, {0, 1, 0, 0}, {0, 0, 1, 0}, {0, 0, 0, 1}};
AK = {{1, 0, 0}, {0, 1, 0}, {0, 0, 1}};

```

```
ClearAll["Global`*"];
```

[lösche alle](#)

```
StartComputation[];
```

```
PM1 = {{-1, 0, 0, 0}, {0, -1, 0, 0}, {0, 0, -1, 0}, {0, 0, 1, 0}}
```

```
PM2 = {{-1, 0, 0, 0}, {0, -1, 0, 0}, {0, 0, -1, 0}, {0, 0, 1, 0}}
```

```
PM2 = {{-1, 0, 0, 0}, {0, -1, 0, 0}, {0, 0, -1, 0}, {0, 0, 1, 0}}
```

```
OC2 = {6, 0, 0, 1}
```

$$M \text{ of } C2 = \begin{pmatrix} \cos[10^\circ] & 0 & \sin[10^\circ] & 0 \\ 0 & 1 & 0 & 0 \\ -\sin[10^\circ] & 0 & \cos[10^\circ] & 0 \\ 0 & 0 & 0 & 1 \end{pmatrix}$$

$$M2 \text{ of } C1 = \begin{pmatrix} 0.984808 & 0. & -0.173648 & -5.90885 \\ 0. & 1. & 0. & 0. \\ 0.173648 & 0. & 0.984808 & -1.04189 \\ 0. & 0. & 0. & 1. \end{pmatrix}$$

$$\text{ProjectionMtxCamera1} = \begin{pmatrix} -\cos[10^\circ] & 0 & -\sin[10^\circ] & 0 \\ 0 & -1 & 0 & 0 \\ \sin[10^\circ] & 0 & -\cos[10^\circ] & 0 \\ -\sin[10^\circ] & 0 & \cos[10^\circ] & 0 \end{pmatrix}$$

$$\text{ProjectionMtxCamera2} = \begin{pmatrix} -0.984808 & 0. & 0.173648 & 5.90885 \\ 0. & -1. & 0. & 0. \\ -0.173648 & 0. & -0.984808 & 1.04189 \\ 0.173648 & 0. & 0.984808 & -1.04189 \end{pmatrix}$$

CameraProjectedPointsK1 =

$$\begin{pmatrix} -3 \cos[10^\circ] + 4 \sin[10^\circ] & -3 \cdot 4 \cos[10^\circ] + 3 \sin[10^\circ] & -4 \cos[10^\circ] - 3 \sin[10^\circ] \\ -5 \cos[10^\circ] + 4 \sin[10^\circ] & -3 \cdot 4 \cos[10^\circ] + 5 \sin[10^\circ] & -4 \cos[10^\circ] - 5 \sin[10^\circ] \\ -5 \cos[10^\circ] + 4 \sin[10^\circ] & -5 \cdot 4 \cos[10^\circ] + 5 \sin[10^\circ] & -4 \cos[10^\circ] - 5 \sin[10^\circ] \\ -3 \cos[10^\circ] + 4 \sin[10^\circ] & -5 \cdot 4 \cos[10^\circ] + 3 \sin[10^\circ] & -4 \cos[10^\circ] - 3 \sin[10^\circ] \\ -3 \cos[10^\circ] + 6 \sin[10^\circ] & -3 \cdot 6 \cos[10^\circ] + 3 \sin[10^\circ] & -6 \cos[10^\circ] - 3 \sin[10^\circ] \\ -5 \cos[10^\circ] + 6 \sin[10^\circ] & -3 \cdot 6 \cos[10^\circ] + 5 \sin[10^\circ] & -6 \cos[10^\circ] - 5 \sin[10^\circ] \\ -5 \cos[10^\circ] + 6 \sin[10^\circ] & -5 \cdot 6 \cos[10^\circ] + 5 \sin[10^\circ] & -6 \cos[10^\circ] - 5 \sin[10^\circ] \\ -3 \cos[10^\circ] + 6 \sin[10^\circ] & -5 \cdot 6 \cos[10^\circ] + 3 \sin[10^\circ] & -6 \cos[10^\circ] - 3 \sin[10^\circ] \\ -8 \cos[10^\circ] + 6 \sin[10^\circ] & -8 \cdot 6 \cos[10^\circ] + 8 \sin[10^\circ] & -6 \cos[10^\circ] - 8 \sin[10^\circ] \end{pmatrix}$$

$$\text{CameraProjectedPointsK2} = \begin{pmatrix} 2.25983 & -3. & 4.46018 & -4.46018 \\ 0.290215 & -3. & 4.11288 & -4.11288 \\ 0.290215 & -5. & 4.11288 & -4.11288 \\ 2.25983 & -5. & 4.46018 & -4.46018 \\ 1.91253 & -3. & 6.42979 & -6.42979 \\ -0.0570813 & -3. & 6.08249 & -6.08249 \\ -0.0570813 & -5. & 6.08249 & -6.08249 \\ 1.91253 & -5. & 6.42979 & -6.42979 \\ -3.0115 & -8. & 5.56155 & -5.56155 \end{pmatrix}$$

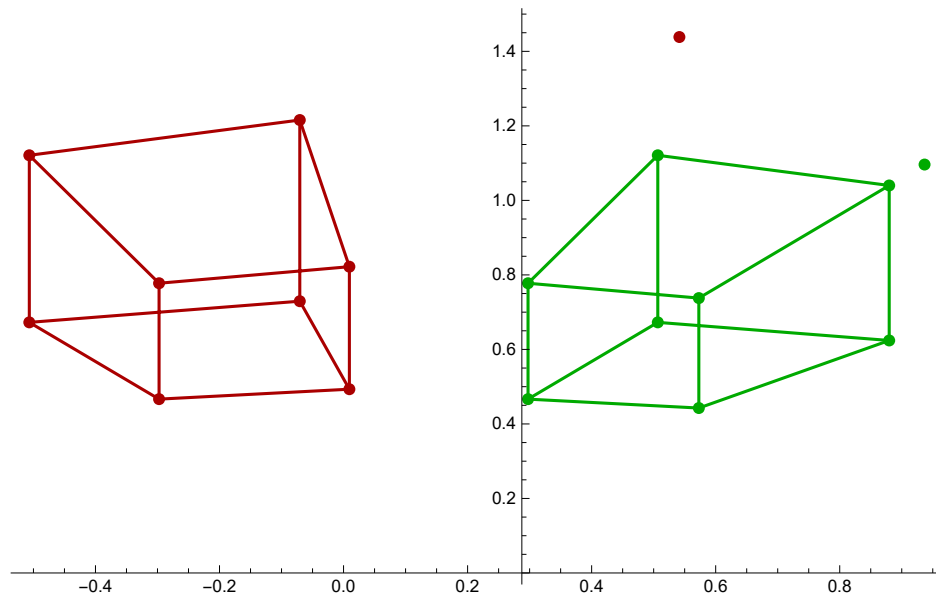
homogene CameraProjectedPointsK1 =

$$\begin{pmatrix} \frac{-3 \cos[10^\circ] + 4 \sin[10^\circ]}{3} & \frac{-4 \cos[10^\circ] - 3 \sin[10^\circ]}{-4 \cos[10^\circ] - 3 \sin[10^\circ]} & \frac{4 \cos[10^\circ] + 3 \sin[10^\circ]}{4 \cos[10^\circ] + 3 \sin[10^\circ]} & 1 \\ \frac{-5 \cos[10^\circ] + 4 \sin[10^\circ]}{3} & \frac{-4 \cos[10^\circ] - 5 \sin[10^\circ]}{-4 \cos[10^\circ] - 5 \sin[10^\circ]} & \frac{4 \cos[10^\circ] + 5 \sin[10^\circ]}{4 \cos[10^\circ] + 5 \sin[10^\circ]} & 1 \\ \frac{-5 \cos[10^\circ] + 4 \sin[10^\circ]}{5} & \frac{-4 \cos[10^\circ] - 5 \sin[10^\circ]}{-4 \cos[10^\circ] - 5 \sin[10^\circ]} & \frac{4 \cos[10^\circ] + 5 \sin[10^\circ]}{4 \cos[10^\circ] + 5 \sin[10^\circ]} & 1 \\ \frac{-3 \cos[10^\circ] + 4 \sin[10^\circ]}{5} & \frac{-4 \cos[10^\circ] - 3 \sin[10^\circ]}{-4 \cos[10^\circ] - 3 \sin[10^\circ]} & \frac{4 \cos[10^\circ] + 3 \sin[10^\circ]}{4 \cos[10^\circ] + 3 \sin[10^\circ]} & 1 \\ \frac{-3 \cos[10^\circ] + 6 \sin[10^\circ]}{3} & \frac{-6 \cos[10^\circ] - 3 \sin[10^\circ]}{-6 \cos[10^\circ] - 3 \sin[10^\circ]} & \frac{6 \cos[10^\circ] + 3 \sin[10^\circ]}{6 \cos[10^\circ] + 3 \sin[10^\circ]} & 1 \\ \frac{-5 \cos[10^\circ] + 6 \sin[10^\circ]}{3} & \frac{-6 \cos[10^\circ] - 5 \sin[10^\circ]}{-6 \cos[10^\circ] - 5 \sin[10^\circ]} & \frac{6 \cos[10^\circ] + 5 \sin[10^\circ]}{6 \cos[10^\circ] + 5 \sin[10^\circ]} & 1 \\ \frac{-6 \cos[10^\circ] - 5 \sin[10^\circ]}{5} & \frac{-6 \cos[10^\circ] - 5 \sin[10^\circ]}{-6 \cos[10^\circ] - 5 \sin[10^\circ]} & \frac{6 \cos[10^\circ] + 5 \sin[10^\circ]}{6 \cos[10^\circ] + 5 \sin[10^\circ]} & 1 \\ \frac{-6 \cos[10^\circ] - 5 \sin[10^\circ]}{5} & \frac{-6 \cos[10^\circ] - 5 \sin[10^\circ]}{-6 \cos[10^\circ] - 5 \sin[10^\circ]} & \frac{6 \cos[10^\circ] + 5 \sin[10^\circ]}{6 \cos[10^\circ] + 5 \sin[10^\circ]} & 1 \\ \frac{-3 \cos[10^\circ] + 6 \sin[10^\circ]}{5} & \frac{-6 \cos[10^\circ] - 3 \sin[10^\circ]}{-6 \cos[10^\circ] - 3 \sin[10^\circ]} & \frac{6 \cos[10^\circ] + 3 \sin[10^\circ]}{6 \cos[10^\circ] + 3 \sin[10^\circ]} & 1 \\ \frac{-8 \cos[10^\circ] + 6 \sin[10^\circ]}{8} & \frac{-6 \cos[10^\circ] - 8 \sin[10^\circ]}{-6 \cos[10^\circ] - 8 \sin[10^\circ]} & \frac{6 \cos[10^\circ] + 8 \sin[10^\circ]}{6 \cos[10^\circ] + 8 \sin[10^\circ]} & 1 \end{pmatrix}$$

$$\text{homogene CameraProjectedPointsK2} = \begin{pmatrix} -0.506669 & 0.672619 & -1. & 1. \\ -0.0705625 & 0.729416 & -1. & 1. \\ -0.0705625 & 1.21569 & -1. & 1. \\ -0.506669 & 1.12103 & -1. & 1. \\ -0.297449 & 0.466578 & -1. & 1. \\ 0.00938452 & 0.493219 & -1. & 1. \\ 0.00938452 & 0.822031 & -1. & 1. \\ -0.297449 & 0.77763 & -1. & 1. \\ 0.541487 & 1.43845 & -1. & 1. \end{pmatrix}$$

Begin construct Epipol_____

End construct Epipol_____



$$\text{ImagePlaneC1Points} = \begin{pmatrix} \frac{3 \cos[10^\circ] - 4 \sin[10^\circ]}{4 \cos[10^\circ] + 3 \sin[10^\circ]} & \frac{3}{4 \cos[10^\circ] + 3 \sin[10^\circ]} & 1 \\ \frac{5 \cos[10^\circ] - 4 \sin[10^\circ]}{4 \cos[10^\circ] + 5 \sin[10^\circ]} & \frac{3}{4 \cos[10^\circ] + 5 \sin[10^\circ]} & 1 \\ \frac{5 \cos[10^\circ] - 4 \sin[10^\circ]}{4 \cos[10^\circ] + 5 \sin[10^\circ]} & \frac{5}{4 \cos[10^\circ] + 5 \sin[10^\circ]} & 1 \\ \frac{3 \cos[10^\circ] - 4 \sin[10^\circ]}{4 \cos[10^\circ] + 3 \sin[10^\circ]} & \frac{5}{4 \cos[10^\circ] + 3 \sin[10^\circ]} & 1 \\ \frac{\cos[10^\circ] - 2 \sin[10^\circ]}{2 \cos[10^\circ] + \sin[10^\circ]} & \frac{1}{2 \cos[10^\circ] + \sin[10^\circ]} & 1 \\ \frac{5 \cos[10^\circ] - 6 \sin[10^\circ]}{6 \cos[10^\circ] + 5 \sin[10^\circ]} & \frac{3}{6 \cos[10^\circ] + 5 \sin[10^\circ]} & 1 \\ \frac{5 \cos[10^\circ] - 6 \sin[10^\circ]}{6 \cos[10^\circ] + 5 \sin[10^\circ]} & \frac{5}{6 \cos[10^\circ] + 5 \sin[10^\circ]} & 1 \\ \frac{\cos[10^\circ] - 2 \sin[10^\circ]}{2 \cos[10^\circ] + \sin[10^\circ]} & \frac{5}{3(2 \cos[10^\circ] + \sin[10^\circ])} & 1 \\ \frac{4 \cos[10^\circ] - 3 \sin[10^\circ]}{3 \cos[10^\circ] + 4 \sin[10^\circ]} & \frac{4}{3 \cos[10^\circ] + 4 \sin[10^\circ]} & 1 \end{pmatrix}$$

$$\text{ImagePlaneC2Points} = \begin{pmatrix} -0.506669 & 0.672619 & 1. \\ -0.0705625 & 0.729416 & 1. \\ -0.0705625 & 1.21569 & 1. \\ -0.506669 & 1.12103 & 1. \\ -0.297449 & 0.466578 & 1. \\ 0.00938452 & 0.493219 & 1. \\ 0.00938452 & 0.822031 & 1. \\ -0.297449 & 0.77763 & 1. \\ 0.541487 & 1.43845 & 1. \end{pmatrix}$$

CoefficientMtx =

$$\begin{pmatrix} -0.256713 & -0.340795 & -0.506669 & 0.340795 & 0.452417 & 0.672619 & 0.506669 & 0.672619 & 1. \\ -0.0620784 & -0.044033 & -0.0705625 & 0.641715 & 0.455176 & 0.729416 & 0.879765 & 0.624029 & 1. \\ -0.0620784 & -0.0733884 & -0.0705625 & 1.06952 & 1.26438 & 1.21569 & 0.879765 & 1.04005 & 1. \\ -0.256713 & -0.567992 & -0.506669 & 0.567992 & 1.25671 & 1.12103 & 0.506669 & 1.12103 & 1. \\ -0.0884758 & -0.138783 & -0.297449 & 0.138783 & 0.217695 & 0.466578 & 0.297449 & 0.466578 & 1. \\ 0.00537578 & 0.00415423 & 0.00938452 & 0.282533 & 0.218332 & 0.493219 & 0.572835 & 0.442668 & 1. \\ 0.00537578 & 0.00692371 & 0.00938452 & 0.470888 & 0.606478 & 0.822031 & 0.572835 & 0.73778 & 1. \\ -0.0884758 & -0.231305 & -0.297449 & 0.231305 & 0.604709 & 0.77763 & 0.297449 & 0.77763 & 1. \\ 0.507248 & 0.59357 & 0.541487 & 1.34749 & 1.57681 & 1.43845 & 0.936769 & 1.09619 & 1. \end{pmatrix}$$

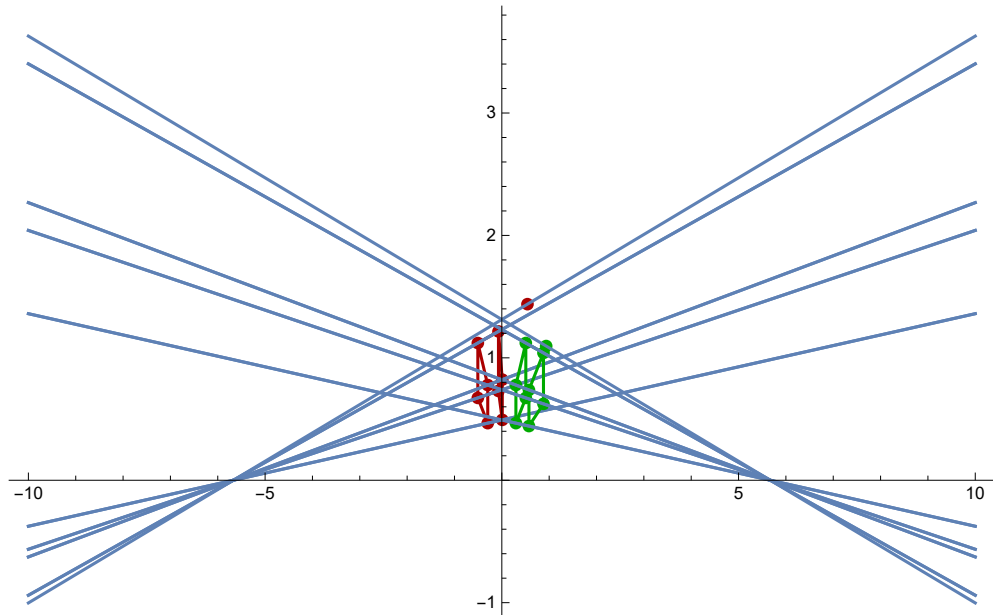
MatrixRank[CoefficientMtx] 8

$$\text{ns} = \left\{ \left\{ -1.53203 \times 10^{-15}, -0.122788, 5.68777 \times 10^{-16}, -0.122788, 2.25388 \times 10^{-16}, 0.696364, -4.0662 \times 10^{-16}, -0.696364, 2.4795 \times 10^{-16} \right\} \right\}$$

$$\text{F} = \begin{pmatrix} -1.53203 \times 10^{-15} & -0.122788 & 5.68777 \times 10^{-16} \\ -0.122788 & 2.25388 \times 10^{-16} & 0.696364 \\ -4.0662 \times 10^{-16} & -0.696364 & 2.4795 \times 10^{-16} \end{pmatrix}$$

```
lC1 = {{-0.0825894, 0.634152, -0.468388},
       {-0.0766231, 0.58834, -0.434551}, {-0.127705, 0.58834, -0.724252},
       {-0.137649, 0.634152, -0.780647}, {-0.0572901, 0.659841, -0.324908},
       {-0.0543542, 0.626027, -0.308258}, {-0.0905904, 0.626027, -0.513764},
       {-0.0954835, 0.659841, -0.541514}, {-0.134598, 0.58134, -0.763345}}
lPrimeC1 = {{-0.0825894, -0.634152, 0.468388},
            {-0.0895634, -0.6877, 0.507939}, {-0.149272, -0.6877, 0.846565},
            {-0.137649, -0.634152, 0.780647}, {-0.0572901, -0.659841, 0.324908},
            {-0.0605612, -0.697517, 0.34346}, {-0.100935, -0.697517, 0.572433},
            {-0.0954835, -0.659841, 0.541514}, {-0.176624, -0.762852, 1.00168}}
e = {-0.984808, 9.23002×10-16, -0.173648}
e' = {-0.984808, 1.14505×10-15, 0.173648}
```

```
EpipoleLines = {
  {0.176327, -1.3539, 1.},
  {0.176327, -1.3539, 1.},
  {0.176327, -0.812341, 1.},
  {0.176327, -0.812341, 1.},
  {0.176327, -2.03085, 1.},
  {0.176327, -2.03085, 1.},
  {0.176327, -1.21851, 1.},
  {0.176327, -1.21851, 1.},
  {0.176327, -0.76157, 1.}
}
```



Begin Computing essential Matrix

```
EMtx = {
  {-1.53203×10-15, -0.122788, -5.68777×10-16},
  {-0.122788, 2.25388×10-16, -0.696364},
  {4.0662×10-16, 0.696364, 2.4795×10-16}
}
```

```
U of E = {{-0.173648, 0., 0.984808},
          {-6.0084×10-15, -1., -1.06266×10-15}, {0.984808, -6.32827×10-15, 0.173648}}
```

```
Sigma of E = {{0.707107, 0., 0.}, {0., 0.707107, 0.}, {0., 0., 0.}}
```

```
V of E = {{2.33147×10-15, 0.173648, -0.984808},
          {1., -6.66411×10-15, 9.23002×10-16}, {6.41676×10-15, 0.984808, 0.173648}}
```

```
S1 = {
  {0., -0.173648, -1.09889×10-15},
  {0.173648, 0., -0.984808},
  {1.09889×10-15, 0.984808, 0.}
}
```

$$S2 = \begin{pmatrix} 0. & 0.173648 & 1.09889 \times 10^{-15} \\ -0.173648 & 0. & 0.984808 \\ -1.09889 \times 10^{-15} & -0.984808 & 0. \end{pmatrix}$$

$$R1 = \begin{pmatrix} 1. & -2.06619 \times 10^{-15} & -7.21645 \times 10^{-16} \\ -2.33464 \times 10^{-15} & -1. & -3.15112 \times 10^{-16} \\ -6.66134 \times 10^{-16} & 7.43163 \times 10^{-17} & -1. \end{pmatrix}$$

$$R2 = \begin{pmatrix} 0.939693 & 2.48231 \times 10^{-16} & -0.34202 \\ 2.41605 \times 10^{-16} & 1. & 6.8417 \times 10^{-16} \\ 0.34202 & -3.94871 \times 10^{-16} & 0.939693 \end{pmatrix}$$

$$\text{Test R1 is rotation} = \{\{1., 2.68448 \times 10^{-16}, -5.55112 \times 10^{-17}\}, \\ \{2.68448 \times 10^{-16}, 1., 2.40796 \times 10^{-16}\}, \{-5.55112 \times 10^{-17}, 2.40796 \times 10^{-16}, 1.\}\}$$

$$\text{Test R2 is rotation} = \{\{1., 3.39811 \times 10^{-16}, -1.11022 \times 10^{-16}\}, \\ \{3.39811 \times 10^{-16}, 1., 2.28212 \times 10^{-16}\}, \{-1.11022 \times 10^{-16}, 2.28212 \times 10^{-16}, 1.\}\}$$

$$\text{Check if t of S1, S2 is equal} = \\ \{\{\{0.984808, -1.11022 \times 10^{-15}, 0.173648\}\}, \{\{0.984808, -1.11022 \times 10^{-15}, 0.173648\}\}\}$$

$$t = \{0.984808, -1.11022 \times 10^{-15}, 0.173648\}$$

$$P21 = \begin{pmatrix} 0.939693 & 2.48231 \times 10^{-16} & -0.34202 & -0.984808 \\ 2.41605 \times 10^{-16} & 1. & 6.8417 \times 10^{-16} & 1.11022 \times 10^{-15} \\ 0.34202 & -3.94871 \times 10^{-16} & 0.939693 & -0.173648 \end{pmatrix}$$

$$P22 = \begin{pmatrix} 1. & -2.06619 \times 10^{-15} & -7.21645 \times 10^{-16} & -0.984808 \\ -2.33464 \times 10^{-15} & -1. & -3.15112 \times 10^{-16} & 1.11022 \times 10^{-15} \\ -6.66134 \times 10^{-16} & 7.43163 \times 10^{-17} & -1. & -0.173648 \end{pmatrix}$$

$$P23 = \begin{pmatrix} 0.939693 & 2.48231 \times 10^{-16} & -0.34202 & 0.984808 \\ 2.41605 \times 10^{-16} & 1. & 6.8417 \times 10^{-16} & -1.11022 \times 10^{-15} \\ 0.34202 & -3.94871 \times 10^{-16} & 0.939693 & 0.173648 \end{pmatrix}$$

$$P24 = \begin{pmatrix} 1. & -2.06619 \times 10^{-15} & -7.21645 \times 10^{-16} & 0.984808 \\ -2.33464 \times 10^{-15} & -1. & -3.15112 \times 10^{-16} & -1.11022 \times 10^{-15} \\ -6.66134 \times 10^{-16} & 7.43163 \times 10^{-17} & -1. & 0.173648 \end{pmatrix}$$

End Computing essential Matrix

$$PList = \{\{\{0.939693, 2.48231 \times 10^{-16}, -0.34202, -0.984808\}, \{2.41605 \times 10^{-16}, 1., \\ 6.8417 \times 10^{-16}, 1.11022 \times 10^{-15}\}, \{0.34202, -3.94871 \times 10^{-16}, 0.939693, -0.173648\}\}, \\ \{\{1., -2.06619 \times 10^{-15}, -7.21645 \times 10^{-16}, -0.984808\}, \{-2.33464 \times 10^{-15}, -1., \\ -3.15112 \times 10^{-16}, 1.11022 \times 10^{-15}\}, \{-6.66134 \times 10^{-16}, 7.43163 \times 10^{-17}, -1., -0.173648\}\}, \\ \{\{0.939693, 2.48231 \times 10^{-16}, -0.34202, 0.984808\}, \{2.41605 \times 10^{-16}, 1., 6.8417 \times 10^{-16}, \\ -1.11022 \times 10^{-15}\}, \{0.34202, -3.94871 \times 10^{-16}, 0.939693, 0.173648\}\}, \\ \{\{1., -2.06619 \times 10^{-15}, -7.21645 \times 10^{-16}, 0.984808\}, \{-2.33464 \times 10^{-15}, -1., \\ -3.15112 \times 10^{-16}, -1.11022 \times 10^{-15}\}, \{-6.66134 \times 10^{-16}, 7.43163 \times 10^{-17}, -1., 0.173648\}\}\}$$

$$\text{Length PList} = 4$$

End Reconstruction of Rotation and

Translation

$$K1, K2 = \begin{pmatrix} -1 & 0 & 0 \\ 0 & -1 & 0 \\ 0 & 0 & 1 \end{pmatrix} \begin{pmatrix} -1 & 0 & 0 \\ 0 & -1 & 0 \\ 0 & 0 & 1 \end{pmatrix}$$

$$K1, K2 = \begin{pmatrix} -1 & 0 & 0 \\ 0 & -1 & 0 \\ 0 & 0 & 1 \end{pmatrix} \begin{pmatrix} -1 & 0 & 0 \\ 0 & -1 & 0 \\ 0 & 0 & 1 \end{pmatrix}$$

$$K1, K2 = \begin{pmatrix} -1 & 0 & 0 \\ 0 & -1 & 0 \\ 0 & 0 & 1 \end{pmatrix} \begin{pmatrix} -1 & 0 & 0 \\ 0 & -1 & 0 \\ 0 & 0 & 1 \end{pmatrix}$$

$$K1, K2 = \begin{pmatrix} -1 & 0 & 0 \\ 0 & -1 & 0 \\ 0 & 0 & 1 \end{pmatrix} \begin{pmatrix} -1 & 0 & 0 \\ 0 & -1 & 0 \\ 0 & 0 & 1 \end{pmatrix}$$

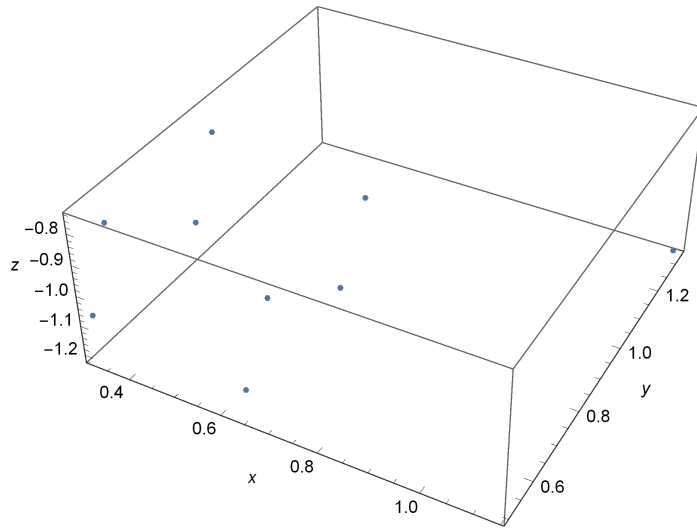
$$K1, K2 = \begin{pmatrix} -1 & 0 & 0 \\ 0 & -1 & 0 \\ 0 & 0 & 1 \end{pmatrix} \begin{pmatrix} -1 & 0 & 0 \\ 0 & -1 & 0 \\ 0 & 0 & 1 \end{pmatrix}$$

$$K1, K2 = \begin{pmatrix} -1 & 0 & 0 \\ 0 & -1 & 0 \\ 0 & 0 & 1 \end{pmatrix} \begin{pmatrix} -1 & 0 & 0 \\ 0 & -1 & 0 \\ 0 & 0 & 1 \end{pmatrix}$$

$$K1, K2 = \begin{pmatrix} -1 & 0 & 0 \\ 0 & -1 & 0 \\ 0 & 0 & 1 \end{pmatrix} \begin{pmatrix} -1 & 0 & 0 \\ 0 & -1 & 0 \\ 0 & 0 & 1 \end{pmatrix}$$

$$K1, K2 = \begin{pmatrix} -1 & 0 & 0 \\ 0 & -1 & 0 \\ 0 & 0 & 1 \end{pmatrix} \begin{pmatrix} -1 & 0 & 0 \\ 0 & -1 & 0 \\ 0 & 0 & 1 \end{pmatrix}$$

$$K1, K2 = \begin{pmatrix} -1 & 0 & 0 \\ 0 & -1 & 0 \\ 0 & 0 & 1 \end{pmatrix} \begin{pmatrix} -1 & 0 & 0 \\ 0 & -1 & 0 \\ 0 & 0 & 1 \end{pmatrix}$$



Reconstructed Points 3D =

```
{ {0.376638, 0.5, -0.743363}, {0.704908, 0.5, -0.801245}, {0.704908, 0.833333, -0.801245},
  {0.376638, 0.833333, -0.743363}, {0.318756, 0.5, -1.07163}, {0.647025, 0.5, -1.12951},
  {0.647025, 0.833333, -1.12951}, {0.318756, 0.833333, -1.07163}, {1.13943, 1.33333, -1.21634} }
```

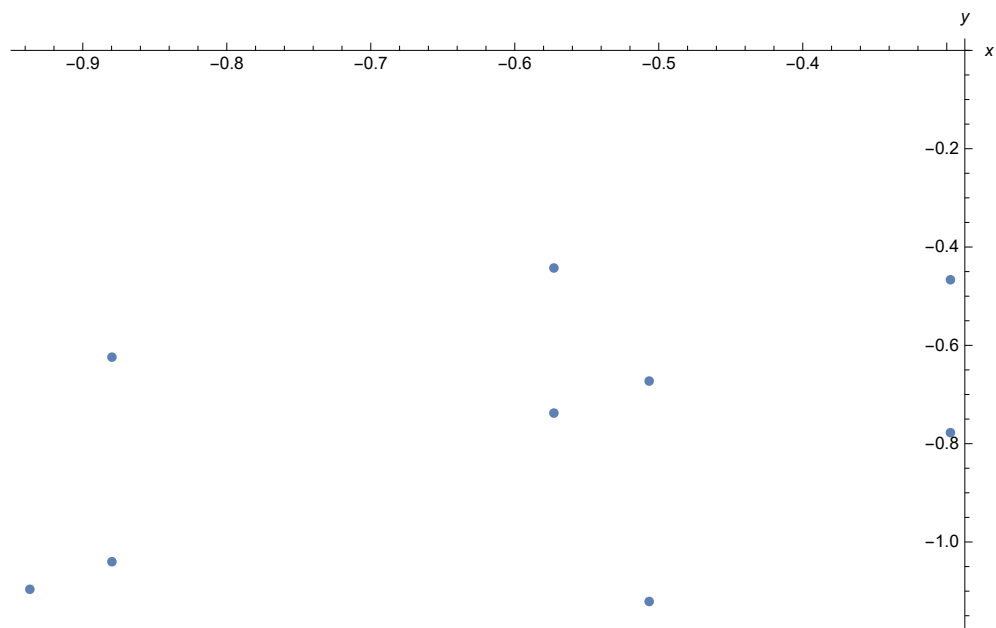
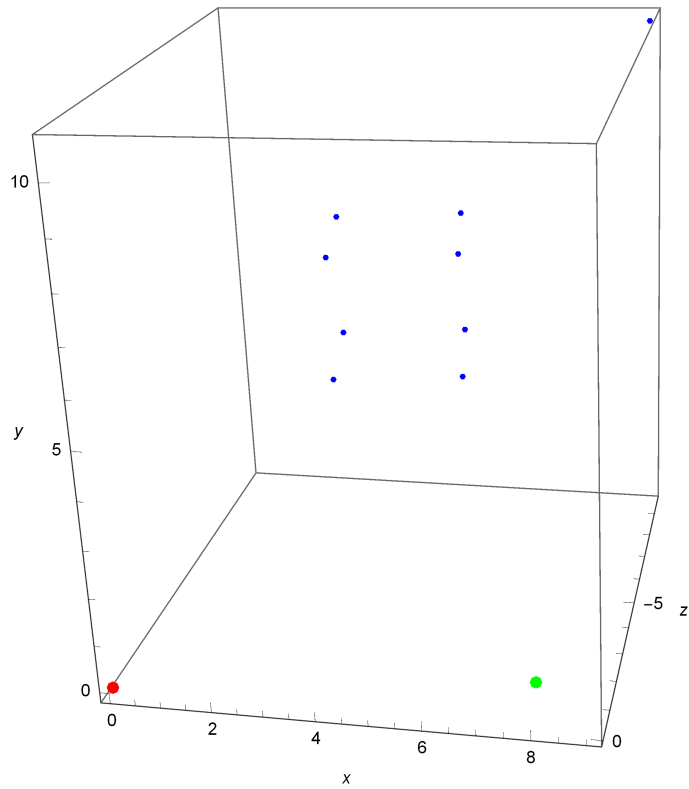
ScaleValue = 7.9652

```
RForOk2 = { {0.939693, 2.41605×10-16, 0.34202},
  {2.48231×10-16, 1., -3.94871×10-16}, {-0.34202, 6.8417×10-16, 0.939693} }
```

```
tForOK2 = {-0.984808, 1.11022×10-15, -0.173648}
```

```
t = {0.984808, -9.34332×10-16, -0.173648}
```

```
Reconstructed scaled Points 3D =
{
  3.      3.9826  -5.92103
  5.61473 3.9826  -6.38208
  5.61473 6.63767 -6.38208
  3.      6.63767 -5.92103
  2.53895 3.9826  -8.53576
  5.15368 3.9826  -8.99681
  5.15368 6.63767 -8.99681
  2.53895 6.63767 -8.53576
  9.07578 10.6203 -9.68838
}
```



$$K1, K2 = \begin{pmatrix} -1 & 0 & 0 \\ 0 & -1 & 0 \\ 0 & 0 & 1 \end{pmatrix} \begin{pmatrix} -1 & 0 & 0 \\ 0 & -1 & 0 \\ 0 & 0 & 1 \end{pmatrix}$$

$$K1, K2 = \begin{pmatrix} -1 & 0 & 0 \\ 0 & -1 & 0 \\ 0 & 0 & 1 \end{pmatrix} \begin{pmatrix} -1 & 0 & 0 \\ 0 & -1 & 0 \\ 0 & 0 & 1 \end{pmatrix}$$

$$K1, K2 = \begin{pmatrix} -1 & 0 & 0 \\ 0 & -1 & 0 \\ 0 & 0 & 1 \end{pmatrix} \begin{pmatrix} -1 & 0 & 0 \\ 0 & -1 & 0 \\ 0 & 0 & 1 \end{pmatrix}$$

$$K1, K2 = \begin{pmatrix} -1 & 0 & 0 \\ 0 & -1 & 0 \\ 0 & 0 & 1 \end{pmatrix} \begin{pmatrix} -1 & 0 & 0 \\ 0 & -1 & 0 \\ 0 & 0 & 1 \end{pmatrix}$$

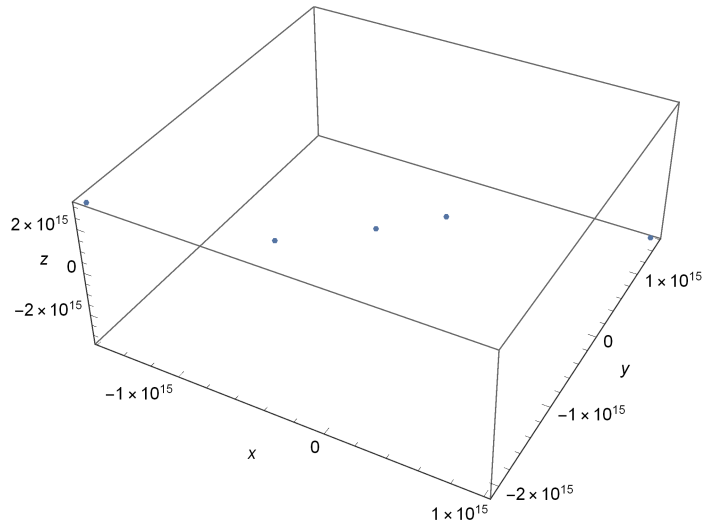
$$K1, K2 = \begin{pmatrix} -1 & 0 & 0 \\ 0 & -1 & 0 \\ 0 & 0 & 1 \end{pmatrix} \begin{pmatrix} -1 & 0 & 0 \\ 0 & -1 & 0 \\ 0 & 0 & 1 \end{pmatrix}$$

$$K1, K2 = \begin{pmatrix} -1 & 0 & 0 \\ 0 & -1 & 0 \\ 0 & 0 & 1 \end{pmatrix} \begin{pmatrix} -1 & 0 & 0 \\ 0 & -1 & 0 \\ 0 & 0 & 1 \end{pmatrix}$$

$$K1, K2 = \begin{pmatrix} -1 & 0 & 0 \\ 0 & -1 & 0 \\ 0 & 0 & 1 \end{pmatrix} \begin{pmatrix} -1 & 0 & 0 \\ 0 & -1 & 0 \\ 0 & 0 & 1 \end{pmatrix}$$

$$K1, K2 = \begin{pmatrix} -1 & 0 & 0 \\ 0 & -1 & 0 \\ 0 & 0 & 1 \end{pmatrix} \begin{pmatrix} -1 & 0 & 0 \\ 0 & -1 & 0 \\ 0 & 0 & 1 \end{pmatrix}$$

$$K1, K2 = \begin{pmatrix} -1 & 0 & 0 \\ 0 & -1 & 0 \\ 0 & 0 & 1 \end{pmatrix} \begin{pmatrix} -1 & 0 & 0 \\ 0 & -1 & 0 \\ 0 & 0 & 1 \end{pmatrix}$$



Reconstructed Points 3D = $\{\{-1.56348 \times 10^{15}, -2.07557 \times 10^{15}, 3.0858 \times 10^{15}\},$
 $\{1.05736, 0.75, -1.20187\}, \{1.05736, 1.25, -1.20187\},$
 $\{-2.66368 \times 10^{14}, -5.89355 \times 10^{14}, 5.25725 \times 10^{14}\}, \{9.86136 \times 10^{14}, 1.54685 \times 10^{15}, -3.31531 \times 10^{15}\},$
 $\{0.970537, 0.75, -1.69427\}, \{0.970537, 1.25, -1.69427\},$
 $\{-5.70975 \times 10^{14}, -1.49272 \times 10^{15}, 1.91957 \times 10^{15}\}, \{0.683657, 0.8, -0.729803\}\}$

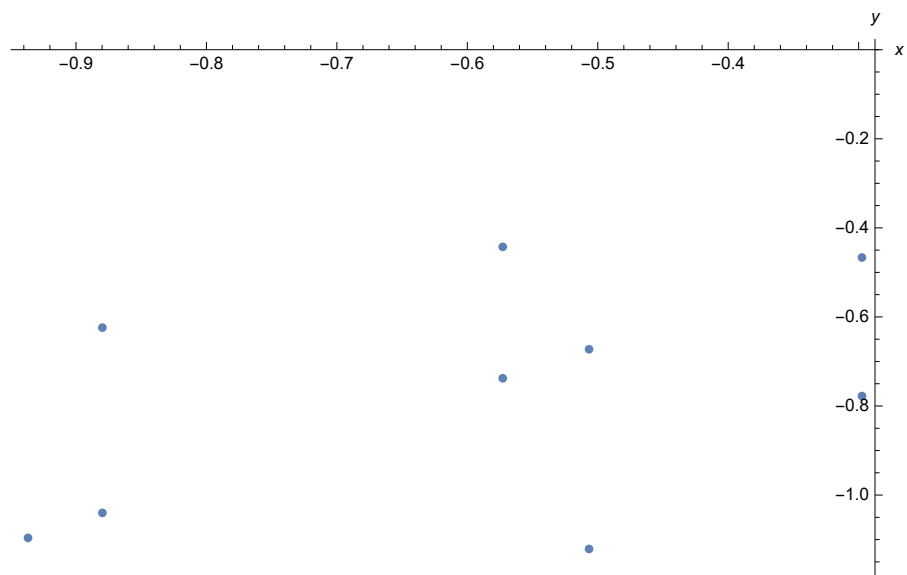
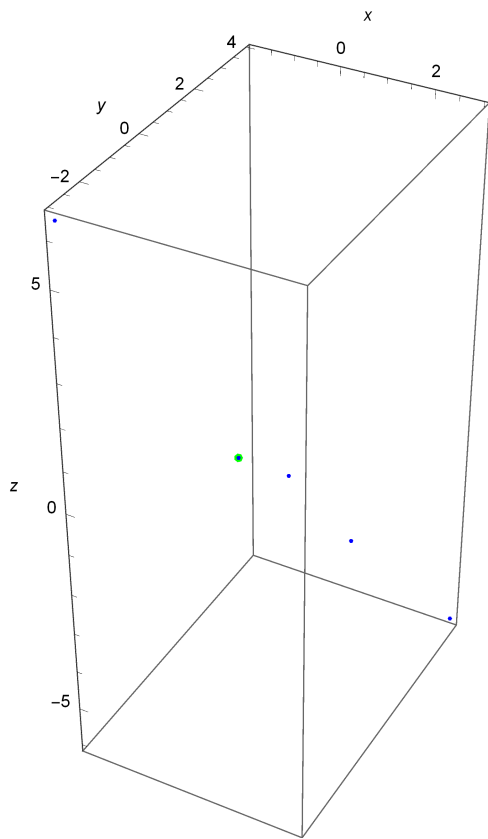
ScaleValue = -1.9188×10^{-15}

RForOk2 = $\{1., -2.33464 \times 10^{-15}, -6.66134 \times 10^{-16}\},$
 $\{-2.06619 \times 10^{-15}, -1., 7.43163 \times 10^{-17}\}, \{-7.21645 \times 10^{-16}, -3.15112 \times 10^{-16}, -1.\}$

tForOK2 = $\{-0.984808, 1.11022 \times 10^{-15}, -0.173648\}$

t = $\{0.984808, -9.11671 \times 10^{-16}, -0.173648\}$

Reconstructed scaled Points 3D = $\begin{pmatrix} 3. & 3.9826 & -5.92103 \\ -2.02887 \times 10^{-15} & -1.4391 \times 10^{-15} & 2.30614 \times 10^{-15} \\ -2.02887 \times 10^{-15} & -2.3985 \times 10^{-15} & 2.30614 \times 10^{-15} \\ 0.511108 & 1.13085 & -1.00876 \\ -1.8922 & -2.9681 & 6.36142 \\ -1.86227 \times 10^{-15} & -1.4391 \times 10^{-15} & 3.25097 \times 10^{-15} \\ -1.86227 \times 10^{-15} & -2.3985 \times 10^{-15} & 3.25097 \times 10^{-15} \\ 1.09559 & 2.86423 & -3.68328 \\ -1.3118 \times 10^{-15} & -1.53504 \times 10^{-15} & 1.40035 \times 10^{-15} \end{pmatrix}$



$$K1, K2 = \begin{pmatrix} -1 & 0 & 0 \\ 0 & -1 & 0 \\ 0 & 0 & 1 \end{pmatrix} \begin{pmatrix} -1 & 0 & 0 \\ 0 & -1 & 0 \\ 0 & 0 & 1 \end{pmatrix}$$

$$K1, K2 = \begin{pmatrix} -1 & 0 & 0 \\ 0 & -1 & 0 \\ 0 & 0 & 1 \end{pmatrix} \begin{pmatrix} -1 & 0 & 0 \\ 0 & -1 & 0 \\ 0 & 0 & 1 \end{pmatrix}$$

$$K1, K2 = \begin{pmatrix} -1 & 0 & 0 \\ 0 & -1 & 0 \\ 0 & 0 & 1 \end{pmatrix} \begin{pmatrix} -1 & 0 & 0 \\ 0 & -1 & 0 \\ 0 & 0 & 1 \end{pmatrix}$$

$$K1, K2 = \begin{pmatrix} -1 & 0 & 0 \\ 0 & -1 & 0 \\ 0 & 0 & 1 \end{pmatrix} \begin{pmatrix} -1 & 0 & 0 \\ 0 & -1 & 0 \\ 0 & 0 & 1 \end{pmatrix}$$

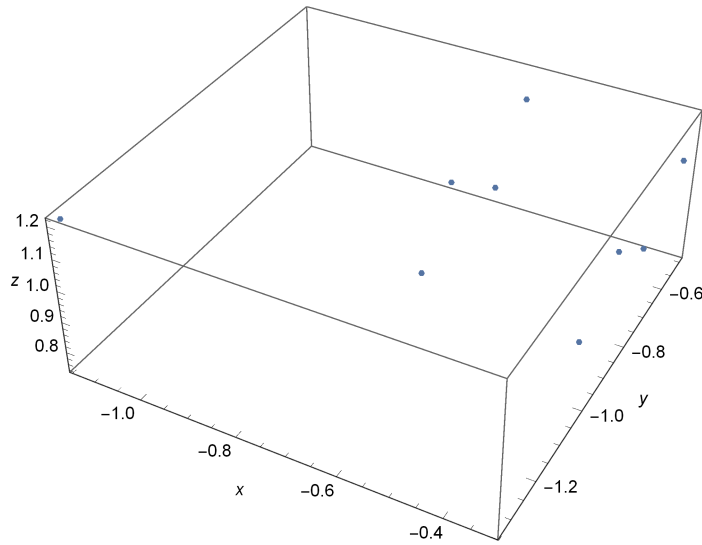
$$K1, K2 = \begin{pmatrix} -1 & 0 & 0 \\ 0 & -1 & 0 \\ 0 & 0 & 1 \end{pmatrix} \begin{pmatrix} -1 & 0 & 0 \\ 0 & -1 & 0 \\ 0 & 0 & 1 \end{pmatrix}$$

$$K1, K2 = \begin{pmatrix} -1 & 0 & 0 \\ 0 & -1 & 0 \\ 0 & 0 & 1 \end{pmatrix} \begin{pmatrix} -1 & 0 & 0 \\ 0 & -1 & 0 \\ 0 & 0 & 1 \end{pmatrix}$$

$$K1, K2 = \begin{pmatrix} -1 & 0 & 0 \\ 0 & -1 & 0 \\ 0 & 0 & 1 \end{pmatrix} \begin{pmatrix} -1 & 0 & 0 \\ 0 & -1 & 0 \\ 0 & 0 & 1 \end{pmatrix}$$

$$K1, K2 = \begin{pmatrix} -1 & 0 & 0 \\ 0 & -1 & 0 \\ 0 & 0 & 1 \end{pmatrix} \begin{pmatrix} -1 & 0 & 0 \\ 0 & -1 & 0 \\ 0 & 0 & 1 \end{pmatrix}$$

$$K1, K2 = \begin{pmatrix} -1 & 0 & 0 \\ 0 & -1 & 0 \\ 0 & 0 & 1 \end{pmatrix} \begin{pmatrix} -1 & 0 & 0 \\ 0 & -1 & 0 \\ 0 & 0 & 1 \end{pmatrix}$$



Reconstructed Points 3D = {{-0.376638, -0.5, 0.743363}, {-0.704908, -0.5, 0.801245},
 {-0.704908, -0.833333, 0.801245}, {-0.376638, -0.833333, 0.743363},
 {-0.318756, -0.5, 1.07163}, {-0.647025, -0.5, 1.12951}, {-0.647025, -0.833333, 1.12951},
 {-0.318756, -0.833333, 1.07163}, {-1.13943, -1.33333, 1.21634}}

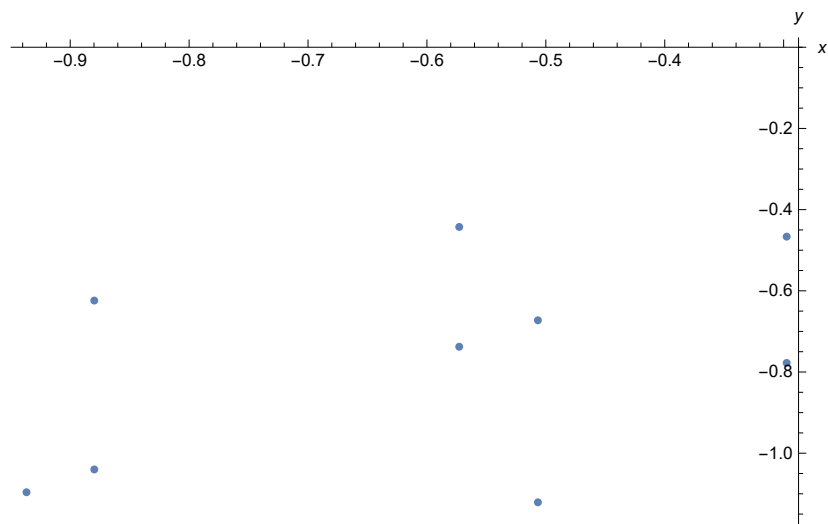
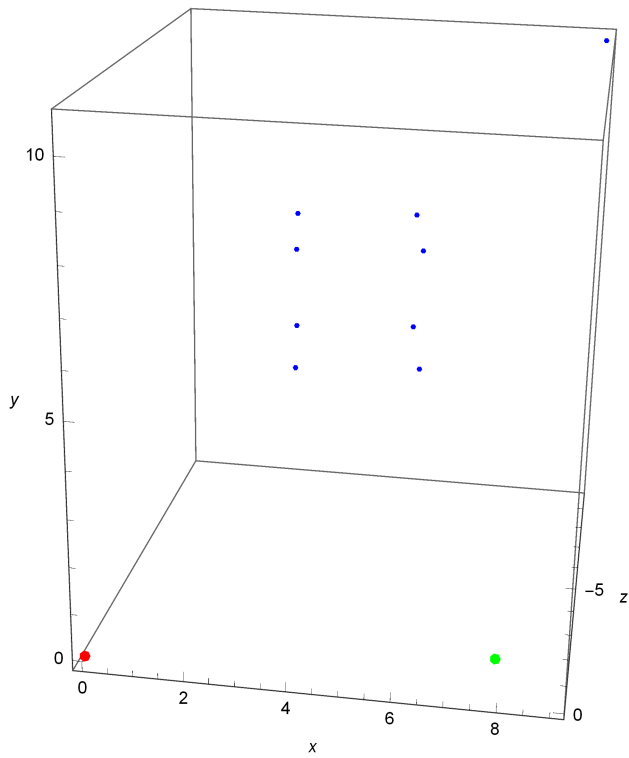
ScaleValue = -7.9652

RForOk2 = {{0.939693, 2.41605×10⁻¹⁶, 0.34202},
 {2.48231×10⁻¹⁶, 1., -3.94871×10⁻¹⁶}, {-0.34202, 6.8417×10⁻¹⁶, 0.939693}}

tForOK2 = {0.984808, -1.11022×10⁻¹⁵, 0.173648}

t = {-0.984808, 9.34332×10⁻¹⁶, 0.173648}

Reconstructed scaled Points 3D =
$$\begin{pmatrix} 3. & 3.9826 & -5.92103 \\ 5.61473 & 3.9826 & -6.38208 \\ 5.61473 & 6.63767 & -6.38208 \\ 3. & 6.63767 & -5.92103 \\ 2.53895 & 3.9826 & -8.53576 \\ 5.15368 & 3.9826 & -8.99681 \\ 5.15368 & 6.63767 & -8.99681 \\ 2.53895 & 6.63767 & -8.53576 \\ 9.07578 & 10.6203 & -9.68838 \end{pmatrix}$$



$$K1, K2 = \begin{pmatrix} -1 & 0 & 0 \\ 0 & -1 & 0 \\ 0 & 0 & 1 \end{pmatrix} \begin{pmatrix} -1 & 0 & 0 \\ 0 & -1 & 0 \\ 0 & 0 & 1 \end{pmatrix}$$

$$K1, K2 = \begin{pmatrix} -1 & 0 & 0 \\ 0 & -1 & 0 \\ 0 & 0 & 1 \end{pmatrix} \begin{pmatrix} -1 & 0 & 0 \\ 0 & -1 & 0 \\ 0 & 0 & 1 \end{pmatrix}$$

$$K1, K2 = \begin{pmatrix} -1 & 0 & 0 \\ 0 & -1 & 0 \\ 0 & 0 & 1 \end{pmatrix} \begin{pmatrix} -1 & 0 & 0 \\ 0 & -1 & 0 \\ 0 & 0 & 1 \end{pmatrix}$$

$$K1, K2 = \begin{pmatrix} -1 & 0 & 0 \\ 0 & -1 & 0 \\ 0 & 0 & 1 \end{pmatrix} \begin{pmatrix} -1 & 0 & 0 \\ 0 & -1 & 0 \\ 0 & 0 & 1 \end{pmatrix}$$

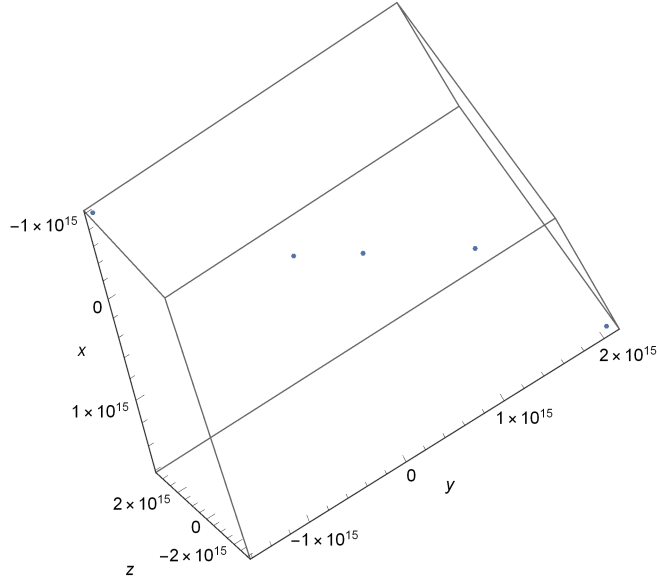
$$K1, K2 = \begin{pmatrix} -1 & 0 & 0 \\ 0 & -1 & 0 \\ 0 & 0 & 1 \end{pmatrix} \begin{pmatrix} -1 & 0 & 0 \\ 0 & -1 & 0 \\ 0 & 0 & 1 \end{pmatrix}$$

$$K1, K2 = \begin{pmatrix} -1 & 0 & 0 \\ 0 & -1 & 0 \\ 0 & 0 & 1 \end{pmatrix} \begin{pmatrix} -1 & 0 & 0 \\ 0 & -1 & 0 \\ 0 & 0 & 1 \end{pmatrix}$$

$$K1, K2 = \begin{pmatrix} -1 & 0 & 0 \\ 0 & -1 & 0 \\ 0 & 0 & 1 \end{pmatrix} \begin{pmatrix} -1 & 0 & 0 \\ 0 & -1 & 0 \\ 0 & 0 & 1 \end{pmatrix}$$

$$K1, K2 = \begin{pmatrix} -1 & 0 & 0 \\ 0 & -1 & 0 \\ 0 & 0 & 1 \end{pmatrix} \begin{pmatrix} -1 & 0 & 0 \\ 0 & -1 & 0 \\ 0 & 0 & 1 \end{pmatrix}$$

$$K1, K2 = \begin{pmatrix} -1 & 0 & 0 \\ 0 & -1 & 0 \\ 0 & 0 & 1 \end{pmatrix} \begin{pmatrix} -1 & 0 & 0 \\ 0 & -1 & 0 \\ 0 & 0 & 1 \end{pmatrix}$$



Reconstructed Points 3D = $\{\{1.56348 \times 10^{15}, 2.07557 \times 10^{15}, -3.0858 \times 10^{15}\},$
 $\{-1.05736, -0.75, 1.20187\}, \{-1.05736, -1.25, 1.20187\},$
 $\{2.66368 \times 10^{14}, 5.89355 \times 10^{14}, -5.25725 \times 10^{14}\}, \{-9.86136 \times 10^{14}, -1.54685 \times 10^{15}, 3.31531 \times 10^{15}\},$
 $\{-0.970537, -0.75, 1.69427\}, \{-0.970537, -1.25, 1.69427\},$
 $\{5.70975 \times 10^{14}, 1.49272 \times 10^{15}, -1.91957 \times 10^{15}\}, \{-0.683657, -0.8, 0.729803\}\}$

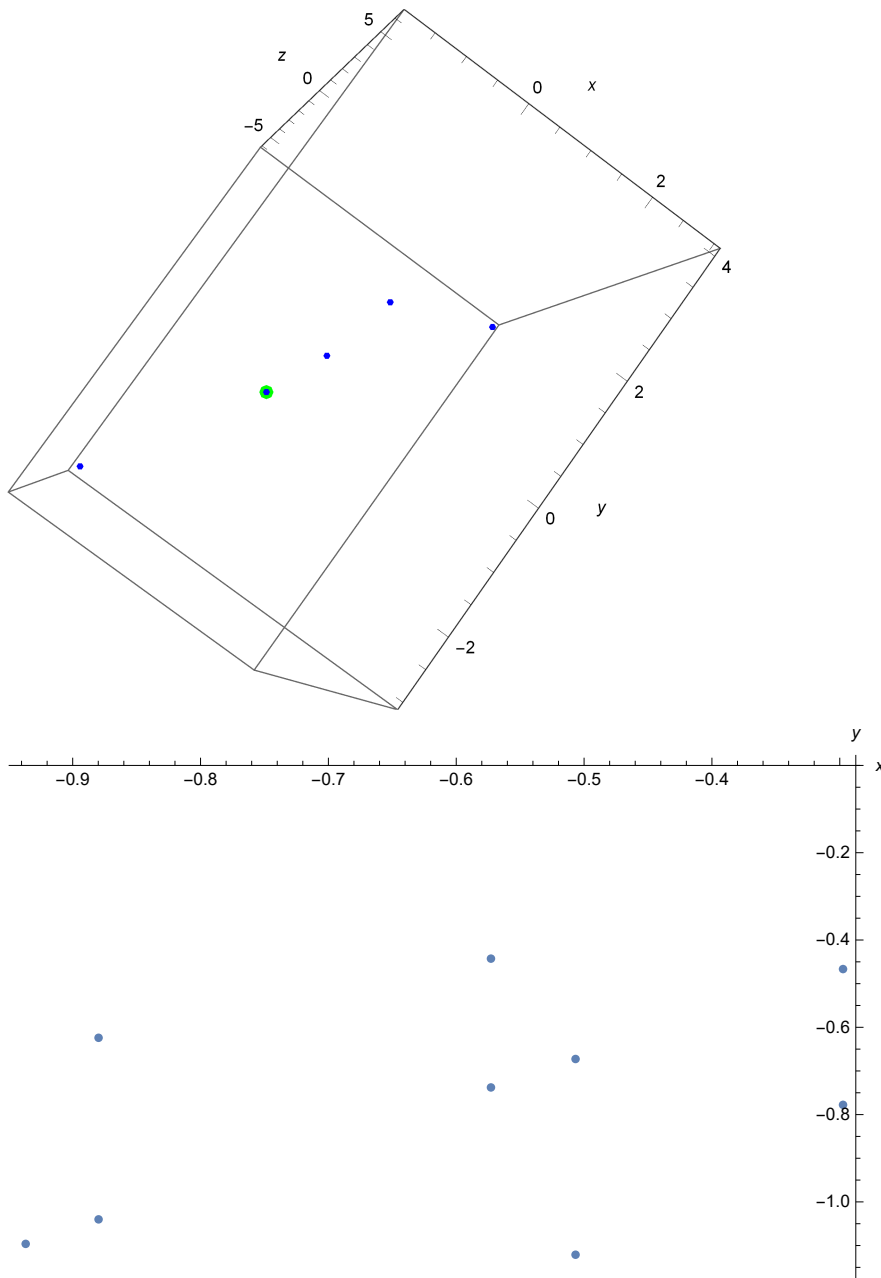
ScaleValue = 1.9188×10^{-15}

RForOk2 = $\{\{1., -2.33464 \times 10^{-15}, -6.66134 \times 10^{-16}\},$
 $\{-2.06619 \times 10^{-15}, -1., 7.43163 \times 10^{-17}\}, \{-7.21645 \times 10^{-16}, -3.15112 \times 10^{-16}, -1.\}\}$

tForOk2 = $\{0.984808, -1.11022 \times 10^{-15}, 0.173648\}$

t = $\{-0.984808, 9.11671 \times 10^{-16}, 0.173648\}$

Reconstructed scaled Points 3D = $\begin{pmatrix} 3. & 3.9826 & -5.92103 \\ -2.02887 \times 10^{-15} & -1.4391 \times 10^{-15} & 2.30614 \times 10^{-15} \\ -2.02887 \times 10^{-15} & -2.3985 \times 10^{-15} & 2.30614 \times 10^{-15} \\ 0.511108 & 1.13085 & -1.00876 \\ -1.8922 & -2.9681 & 6.36142 \\ -1.86227 \times 10^{-15} & -1.4391 \times 10^{-15} & 3.25097 \times 10^{-15} \\ -1.86227 \times 10^{-15} & -2.3985 \times 10^{-15} & 3.25097 \times 10^{-15} \\ 1.09559 & 2.86423 & -3.68328 \\ -1.3118 \times 10^{-15} & -1.53504 \times 10^{-15} & 1.40035 \times 10^{-15} \end{pmatrix}$



Begin New Rectification with Disortion minimization

criterion_____

```

pi = {{0.506669, 0.672619, 1.}, {0.879765, 0.624029, 1.}, {0.879765, 1.04005, 1.},
      {0.506669, 1.12103, 1.}, {0.297449, 0.466578, 1.}, {0.572835, 0.442668, 1.},
      {0.572835, 0.73778, 1.}, {0.297449, 0.77763, 1.}, {0.936769, 1.09619, 1.}}
pj = {{-0.506669, 0.672619, 1.}, {-0.0705625, 0.729416, 1.}, {-0.0705625, 1.21569, 1.},
      {-0.506669, 1.12103, 1.}, {-0.297449, 0.466578, 1.}, {0.00938452, 0.493219, 1.},
      {0.00938452, 0.822031, 1.}, {-0.297449, 0.77763, 1.}, {0.541487, 1.43845, 1.}}

```

n = 9

minXpi = 0.297449

maxXPi = 0.936769

minYpi = 0.442668

```

maxYPi = 1.12103
minXPj = -0.506669
maxXPj = 0.541487
minYPj = 0.466578
maxYPj = 1.43845
piWidth = 3.
piHeight = 3.
pjWidth = 3.
pjHeight = 3.
pc =  $\begin{pmatrix} 0.605578 \\ 0.775397 \\ 1. \end{pmatrix}$ 
pcPrime =  $\begin{pmatrix} -0.132123 \\ 0.85963 \\ 1. \end{pmatrix}$ 
P = {{-0.0989096, 0.274187, 0.274187, -0.0989096, -0.308129, -0.0327436, -0.0327436,
-0.308129, 0.331191}, {-0.102777, -0.151368, 0.264651, 0.345635, -0.308819,
-0.332729, -0.0376166, 0.00223357, 0.320789}, {0., 0., 0., 0., 0., 0., 0., 0.}}
PPrime = {{-0.374546, 0.0615602, 0.0615602, -0.374546, -0.165326, 0.141507, 0.141507,
-0.165326, 0.673609}, {-0.18701, -0.130214, 0.356064, 0.261402, -0.393052,
-0.366411, -0.0375985, -0.0819994, 0.578818}, {0., 0., 0., 0., 0., 0., 0., 0.}}
PP = {{0.471642, 0.219877, 0.}, {0.219877, 0.533382, 0.}, {0., 0., 0.}}
PPPrime = {{0.836612, 0.397306, 0.}, {0.397306, 0.878956, 0.}, {0., 0., 0.}}
pc = {0.605578, 0.775397, 1.}
pcpc =
{{0.366725, 0.469563, 0.605578}, {0.469563, 0.60124, 0.775397}, {0.605578, 0.775397, 1.}}
pcpcPrime =
{{0.0174564, -0.113577, -0.132123}, {-0.113577, 0.738963, 0.85963}, {-0.132123, 0.85963, 1.}}
A =  $\begin{pmatrix} 0.0160834 & -0.00663009 & -0.0912138 \\ -0.00663009 & 0.0142218 & 0.0376011 \\ -0.0912138 & 0.0376011 & 0.517299 \end{pmatrix}$ 
B =  $\begin{pmatrix} 0.0090648 & 0.0733799 & -0.051409 \\ 0.0733799 & 0.594012 & -0.416158 \\ -0.051409 & -0.416158 & 0.291555 \end{pmatrix}$ 
APrime =  $\begin{pmatrix} 0.0265038 & -0.0119802 & 0.15031 \\ -0.0119802 & 0.0252269 & -0.0679432 \\ 0.15031 & -0.0679432 & 0.852452 \end{pmatrix}$ 
BPrime =  $\begin{pmatrix} -2.13654 \times 10^{-17} & -0.011034 & 3.21598 \times 10^{-17} \\ 0.0111412 & -1.31778 \times 10^{-16} & -0.35834 \\ -6.00356 \times 10^{-17} & -0.473626 & 1.48426 \times 10^{-16} \end{pmatrix}$ 
{A[[1,1;;2]],A[[2,1;;2]]}={{0.0160834, -0.00663009}, {-0.00663009, 0.0142218}}
{APrime[[1,1;;2]],APrime[[2,1;;2]]}={{0.0265038, -0.0119802}, {-0.0119802, 0.0252269}}
DD={{0.126821, -0.0522793}, {0., 0.107185}}
DDPrime={{0.1628, -0.0735887}, {0., 0.140754}}
{B[[1,1;;2]],B[[2,1;;2]]}={{0.0090648, 0.0733799}, {0.0733799, 0.594012}}
{BPrime[[1,1;;2]],BPrime[[2,1;;2]]}=
{{-2.13654 × 10-17, -0.011034}, {0.0111412, -1.31778 × 10-16}}
DTBD[[2,1]] = {0.0988603, 0.995101}

```

```

Eigensystem DTB1 = {{57.668, 0.}, {{0.0988603, 0.995101}, {-0.995101, 0.0988603}}}
Eigensystem DTBPrimeD = {{0.00122367 + 0.483857 i, 0.00122367 - 0.483857 i},
  {{-0.00178393 + 0.705392 i, 0.708815 + 0. i}, {-0.00178393 - 0.705392 i, 0.708815 + 0. i}}}
z1 first = {4.60666, 9.28396}
z1= {4.60666, 9.28396}
z2 first = {2.26535 + 4.33288 i, 5.03585 + 0. i}
... GreaterEqual: Invalid comparison with 0.00122367 - 0.483857 i attempted.
z2= {2.26535 + 4.33288 i, 5.03585 + 0. i}
z = {17.383 + 0. i, 17.383 + 0. i, 0.}
w = {3.01852 + 0. i, -3.01852 + 0. i, -17.1189 + 0. i}
wPrime = {-2.13442 + 0. i, -2.13442 + 0. i, -12.1049 + 0. i}
wPrime = {0.176327 + 0. i, 0.176327 + 0. i, 1. + 0. i}
w = {-0.176327 + 0. i, 0.176327 + 0. i, 1. + 0. i}
HpPrime = 
$$\begin{pmatrix} 1. & 0. & 0. \\ 0. & 1. & 0. \\ 0.176327 + 0. i & 0.176327 + 0. i & 1. + 0. i \end{pmatrix}$$

Hp = 
$$\begin{pmatrix} 1. & 0. & 0. \\ 0. & 1. & 0. \\ -0.176327 + 0. i & 0.176327 + 0. i & 1. + 0. i \end{pmatrix}$$

ePrime inf = {-0.984808 + 0. i, 1.14505 × 10-15 + 0. i, -1.85962 × 10-15 + 0. i}
e inf = {-0.984808 + 0. i, 9.23002 × 10-16 + 0. i, 0. + 0. i}
HrPrime = 
$$\begin{pmatrix} -0.696364 + 0. i & 5.25057 \times 10^{-16} + 0. i & 0. \\ -5.25057 \times 10^{-16} + 0. i & -0.696364 + 0. i & 0.705 \\ 0. & 0. & 1. \end{pmatrix}$$

Hr = 
$$\begin{pmatrix} -0.696364 + 0. i & 3.629 \times 10^{-16} + 0. i & 0. \\ -3.629 \times 10^{-16} + 0. i & -0.696364 + 0. i & 0.705 \\ 0. & 0. & 1. \end{pmatrix}$$

ePrimeHorizontal = {0.685785 + 0. i, -1.59132 × 10-15 + 0. i, -1.85962 × 10-15 + 0. i}
eHorizontal = {0.685785 + 0. i, -2.85359 × 10-16 + 0. i, 0. + 0. i}
piA = {-1.04455 + 0. i, 0.518534 + 0. i, 0.73551 + 0. i}
piB = {-2.08909 + 0. i, -0.526012 + 0. i, 0.73551 + 0. i}
piC = {-1.04455 + 0. i, -1.19763 + 0. i, 1.26449 + 0. i}
piD = {5.4435 × 10-16 + 0. i, -0.153081 + 0. i, 1.26449 + 0. i}
piX = {-2.08909 + 0. i, -0.372932 + 0. i, -0.528981 + 0. i}
piY = {1.11022 × 10-15 + 0. i, -1.71616 + 0. i, 0.528981 + 0. i}
piSA = -0.860278 + 0. i
piSB = 0.217306 + 0. i
pjA = {-1.04455 + 0. i, 0.891466 + 0. i, 1.26449 + 0. i}
pjB = {-2.08909 + 0. i, 0.219851 + 0. i, 1.79347 + 0. i}
pjC = {-1.04455 + 0. i, -0.824695 + 0. i, 1.79347 + 0. i}
pjD = {7.87585 × 10-16 + 0. i, -0.153081 + 0. i, 1.26449 + 0. i}
pjX = {-2.08909 + 0. i, 0.372932 + 0. i, 0.528981 + 0. i}
pjY = {1.55431 × 10-15 + 0. i, -1.71616 + 0. i, 0.528981 + 0. i}

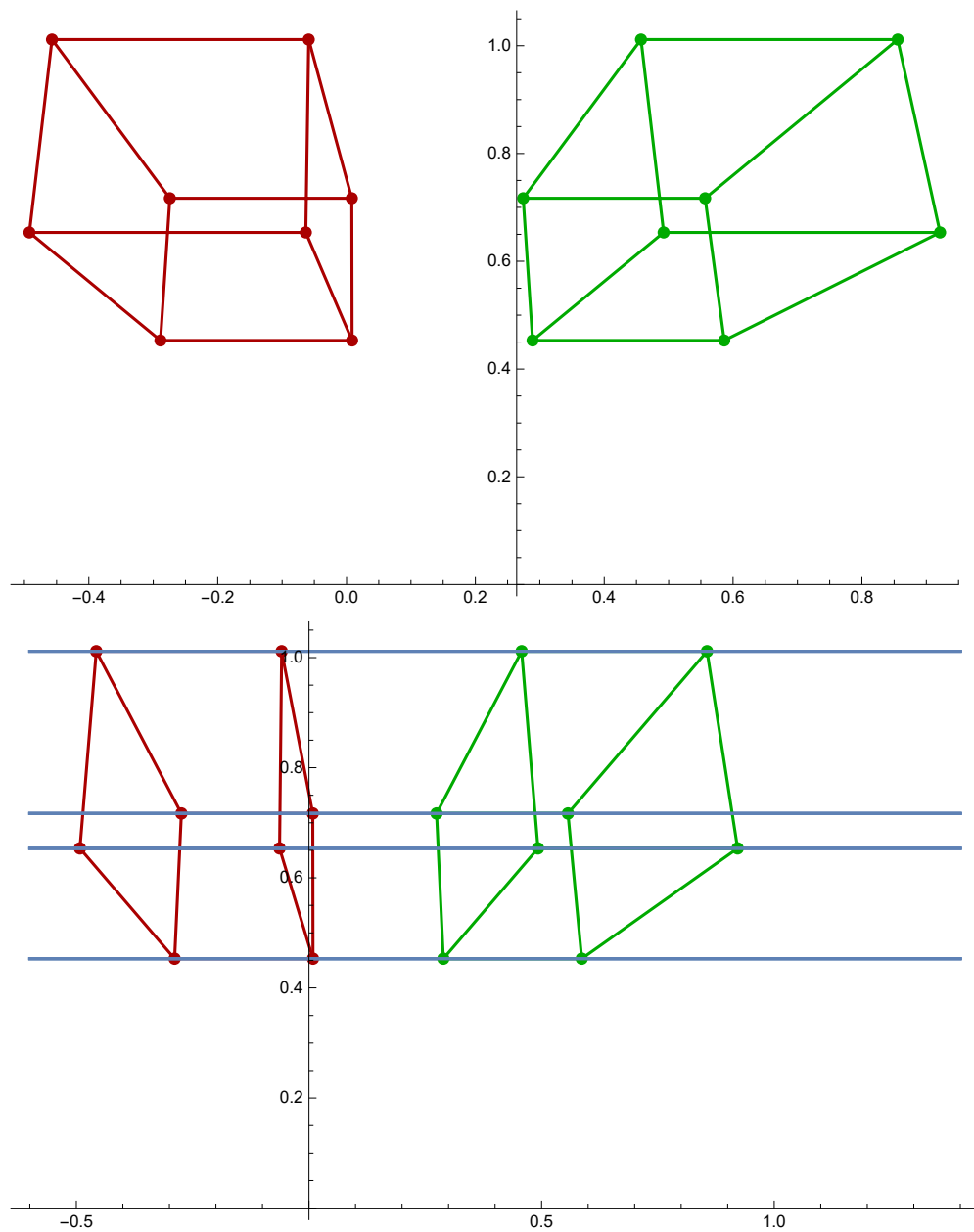
```

$$pjSA = -0.860278 + 0. i$$

$$pjSB = -0.217306 + 0. i$$

$$RecPointsC1 = \begin{pmatrix} 0.492264 + 0. i & 0.653497 + 0. i & 1. + 0. i \\ 0.92131 + 0. i & 0.653497 + 0. i & 1. + 0. i \\ 0.855584 + 0. i & 1.01146 + 0. i & 1. + 0. i \\ 0.457146 + 0. i & 1.01146 + 0. i & 1. + 0. i \\ 0.288835 + 0. i & 0.453067 + 0. i & 1. + 0. i \\ 0.586291 + 0. i & 0.453067 + 0. i & 1. + 0. i \\ 0.556645 + 0. i & 0.716929 + 0. i & 1. + 0. i \\ 0.27423 + 0. i & 0.716929 + 0. i & 1. + 0. i \end{pmatrix}$$

$$RecPointsC2 = \begin{pmatrix} -0.492264 + 0. i & 0.653497 + 0. i & 1. + 0. i \\ -0.0632182 + 0. i & 0.653497 + 0. i & 1. + 0. i \\ -0.0587083 + 0. i & 1.01146 + 0. i & 1. + 0. i \\ -0.457146 + 0. i & 1.01146 + 0. i & 1. + 0. i \\ -0.288835 + 0. i & 0.453067 + 0. i & 1. + 0. i \\ 0.00862055 + 0. i & 0.453067 + 0. i & 1. + 0. i \\ 0.00818465 + 0. i & 0.716929 + 0. i & 1. + 0. i \\ -0.27423 + 0. i & 0.716929 + 0. i & 1. + 0. i \end{pmatrix}$$



End New Rectification with Disortion minimization

criterion_____