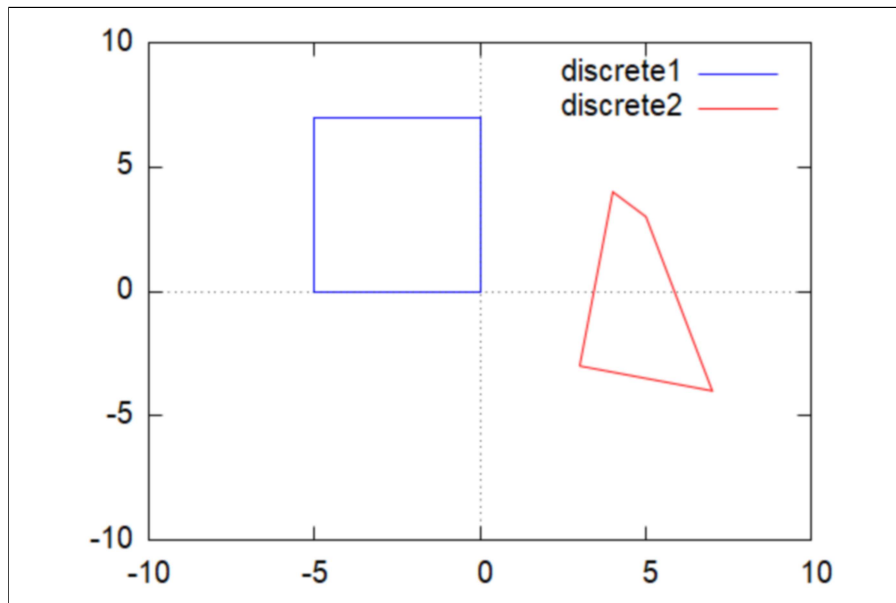


(%i4) A:[-5,0]\$ B:[0,0]\$ C:[0,7]\$ D:[-5,7]\$

(%i8) A1:[3,-3]\$ B1:[7,-4]\$ C1:[5,3]\$ D1:[4,4]\$

(%i9) wxplot2d([[discrete,[A,B,C,D,A]],[discrete,[A1,B1,C1,D1,A1]]],[x,-10,10],[y,-10,10])\$

(%t9)



(%i10) M:matrix([a11,a12,a13],[a21,a22,a23],[a31,a32,a33]);

$$(M) \begin{pmatrix} a_{11} & a_{12} & a_{13} \\ a_{21} & a_{22} & a_{23} \\ a_{31} & a_{32} & a_{33} \end{pmatrix}$$

(%i11) mP:matrix([A[1],B[1],C[1],D[1]],[A[2],B[2],C[2],D[2]],[1,1,1,1]);

$$(mP) \begin{pmatrix} -5 & 0 & 0 & -5 \\ 0 & 0 & 7 & 7 \\ 1 & 1 & 1 & 1 \end{pmatrix}$$

(%i12) mP1:matrix([i·A1[1],j·B1[1],k·C1[1],l·D1[1]],[i·A1[2],j·B1[2],k·C1[2],l·D1[2]],[i,j,k,l]);

$$(mP1) \begin{pmatrix} 3i & 7j & 5k & 4l \\ -3i & -4j & 3k & 4l \\ i & j & k & l \end{pmatrix}$$

(%i13) E:M.mP-mP1;

$$(E) \begin{pmatrix} -3i+a_{13}-5a_{11} & a_{13}-7j & -5k+a_{13}+7a_{12} & -4l+a_{13}+7a_{12}-5a_{11} \\ 3i+a_{23}-5a_{21} & 4j+a_{23} & -3k+a_{23}+7a_{22} & -4l+a_{23}+7a_{22}-5a_{21} \\ -i+a_{33}-5a_{31} & a_{33}-j & -k+a_{33}+7a_{32} & -l+a_{33}+7a_{32}-5a_{31} \end{pmatrix}$$

(%i14) Sol1:solve([E[1,1],E[1,2],E[1,3],E[1,4],E[2,1],E[2,2],E[2,3],E[2,4],E[3,1],E[3,2],E[3,3],E[3,4]],[a11,a12,a13,a21,a22,a23,a31,a32,a33],[i,j,k])

$$(Sol1) \left[ \left[ a11 = \frac{41}{130}, a12 = \frac{89}{182}, a13 = \frac{28}{13}, a21 = -\frac{17}{130}, a22 = \frac{17}{26}, a23 = -\frac{16}{13}, a31 = \frac{3}{130}, a32 = \frac{3}{26}, a33 = \frac{4}{13}, i = \frac{5}{26}, j = \frac{4}{13}, k = \frac{29}{26} \right] \right]$$

(%i15) Sol2:subst([l=1],Sol1[1]);

$$(Sol2) \left[ a11 = \frac{41}{130}, a12 = \frac{89}{182}, a13 = \frac{28}{13}, a21 = -\frac{17}{130}, a22 = \frac{17}{26}, a23 = -\frac{16}{13}, a31 = \frac{3}{130}, a32 = \frac{3}{26}, a33 = \frac{4}{13}, i = \frac{5}{26}, j = \frac{4}{13}, k = \frac{29}{26} \right]$$

(%i16) Mh:subst(Sol2,M);

$$(Mh) \begin{pmatrix} \frac{41}{130} & \frac{89}{182} & \frac{28}{13} \\ -\frac{17}{130} & \frac{17}{26} & -\frac{16}{13} \\ \frac{3}{130} & \frac{3}{26} & \frac{4}{13} \end{pmatrix}$$

(%i17) Ph:Mh.mP;

$$(Ph) \begin{pmatrix} \frac{15}{26} & \frac{28}{13} & \frac{145}{26} & 4 \\ -\frac{15}{26} & -\frac{16}{13} & \frac{87}{26} & 4 \\ \frac{5}{26} & \frac{4}{13} & \frac{29}{26} & 1 \end{pmatrix}$$

(%i21) Ah:[Ph[1,1]/Ph[3,1],Ph[2,1]/Ph[3,1]]; Bh:[Ph[1,2]/Ph[3,2],Ph[2,2]/Ph[3,2]]; Ch:[Ph[1,3]/Ph[3,3],Ph[2,3]/Ph[3,3]]; Dh:[Ph[1,4]/Ph[3,4],Ph[2,4]/Ph[3,4]]

$$(Ah) [3, -3]$$

$$(Bh) [7, -4]$$

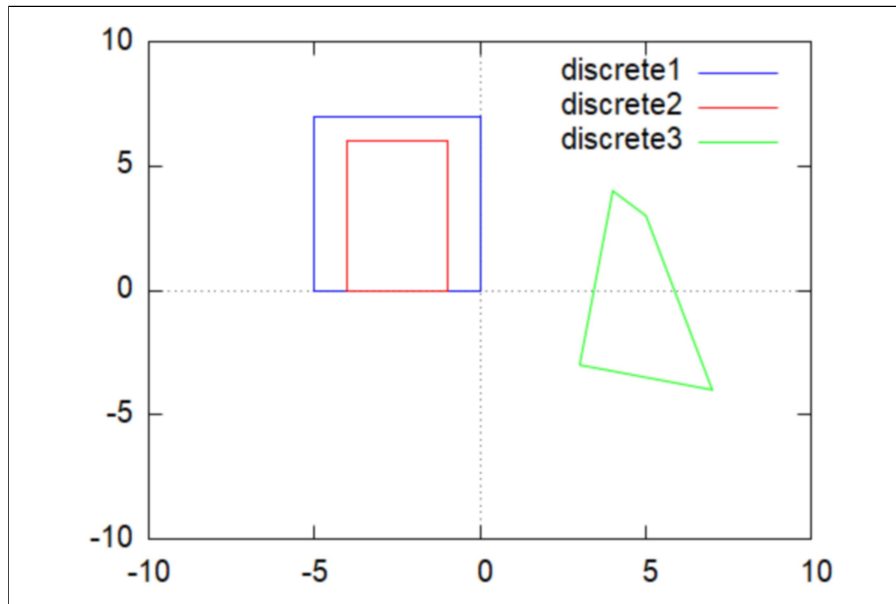
$$(Ch) [5, 3]$$

$$(Dh) [4, 4]$$

(%i25) A0:[-4,0]\$ B0:[-1,0]\$ C0:[-1,6]\$ D0:[-4,6]\$

```
(%i26) wxplot2d([[discrete,[A,B,C,D,A]],[discrete,[A0,B0,C0,D0,A0]],[discrete,[A1,B1,C1,D1,A1]]],[x,-10,
```

```
(%t26)
```



```
(%i27) mP0:matrix([A0[1],B0[1],C0[1],D0[1]],[A0[2],B0[2],C0[2],D0[2]],[1,1,1,1]);
```

$$(mP0) \begin{pmatrix} -4 & -1 & -1 & -4 \\ 0 & 0 & 6 & 6 \\ 1 & 1 & 1 & 1 \end{pmatrix}$$

```
(%i28) P0h:Mh.mP0;
```

$$(P0h) \begin{pmatrix} \frac{58}{65} & \frac{239}{130} & \frac{4343}{910} & \frac{1741}{455} \\ -\frac{46}{65} & -\frac{11}{10} & \frac{367}{130} & \frac{209}{65} \\ \frac{14}{65} & \frac{37}{130} & \frac{127}{130} & \frac{59}{65} \end{pmatrix}$$

```
(%i32) A0h:[P0h[1,1]/P0h[3,1],P0h[2,1]/P0h[3,1]]; B0h:[P0h[1,2]/P0h[3,2],P0h[2,2]/P0h[3,2]]; C0h:[P0h[1,
```

$$(A0h) \left[ \frac{29}{7}, -\frac{23}{7} \right]$$

$$(B0h) \left[ \frac{239}{37}, -\frac{143}{37} \right]$$

$$(C0h) \left[ \frac{4343}{889}, \frac{367}{127} \right]$$

$$(D0h) \left[ \frac{1741}{413}, \frac{209}{59} \right]$$

```
(%i33) wxplot2d([[discrete,[A,B,C,D,A]],[discrete,[A0,B0,C0,D0,A0]],[discrete,[A1,B1,C1,D1,A1]],[discrete,
```

(%t33)

