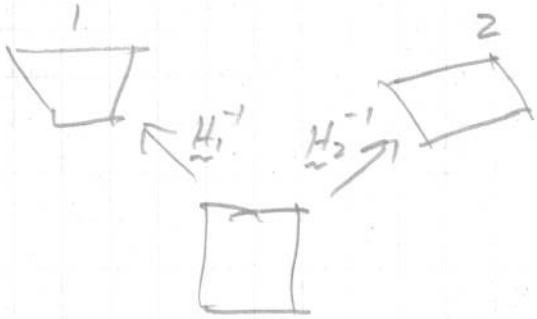
2D PROJECTIVE TRANSFORMATION, 4 POINT

$$\begin{bmatrix} x_1 & x_2 & x_3 \\ y_1 & y_2 & y_3 \\ w_1 & w_2 & w_3 \end{bmatrix} \begin{bmatrix} s_1 \\ s_2 \\ s_3 \end{bmatrix} = \begin{bmatrix} x_4 \\ y_4 \\ w_4 \end{bmatrix}$$

SOLVE FOR SCALES VECTOR $\underset{\sim}{s}$

$$\underset{\sim}{H}^{-1} = \begin{bmatrix} s_1 x_1 & s_2 x_2 & s_3 x_3 \\ s_1 y_1 & s_2 y_2 & s_3 y_3 \\ s_1 w_1 & s_2 w_2 & s_3 w_3 \end{bmatrix}$$



CANONICAL PROJECTIVE BASIS

$$\underset{\sim}{H}_{12} = \underset{\sim}{H}_2^{-1}\,\underset{\sim}{H}_1 = \underset{\sim}{H}_2^{-1}\,(\underset{\sim}{H}_1^{-1})^{-1}$$