by: Tushar Chugh

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3d Reconstruction

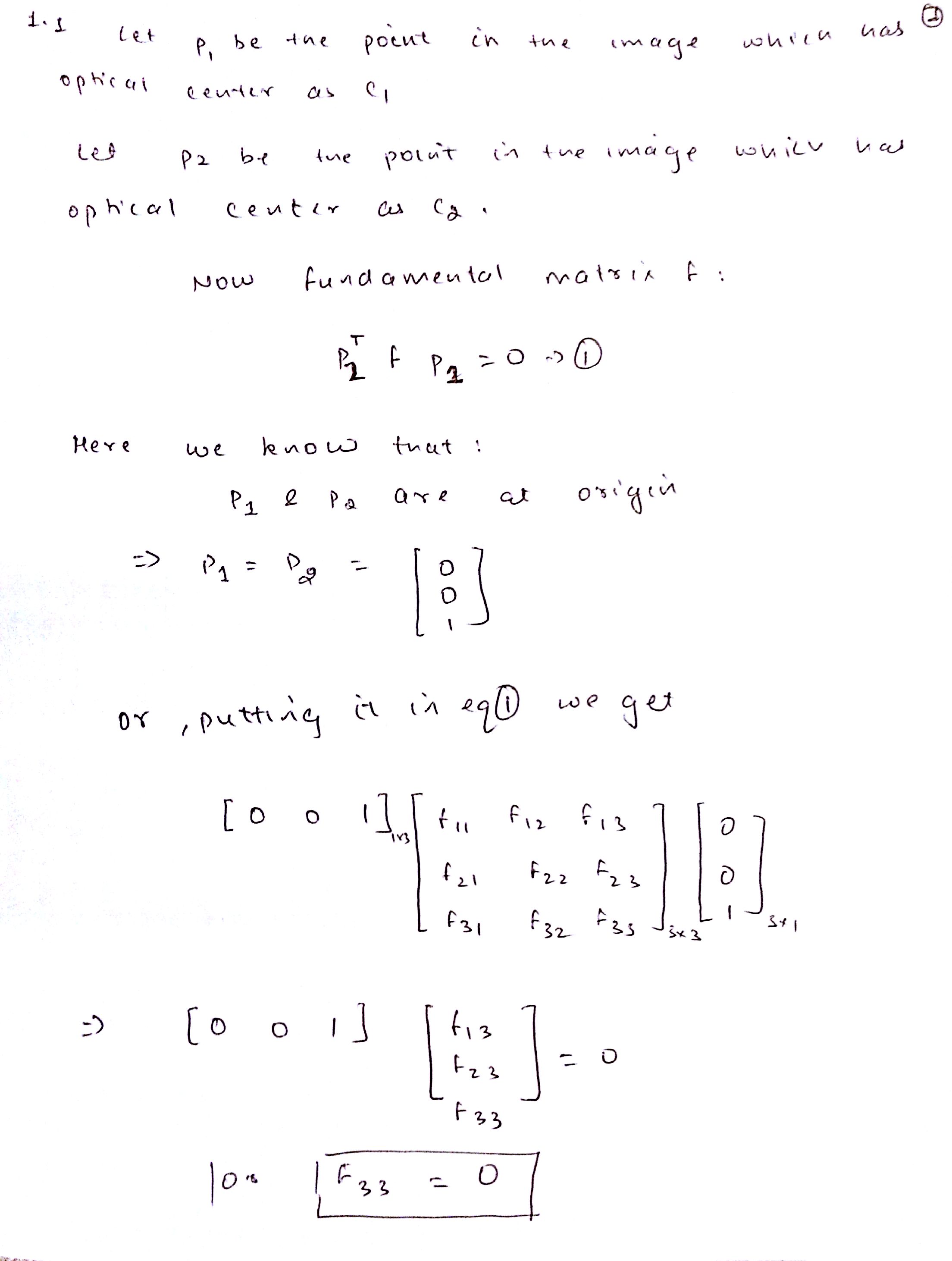
Computer Vision

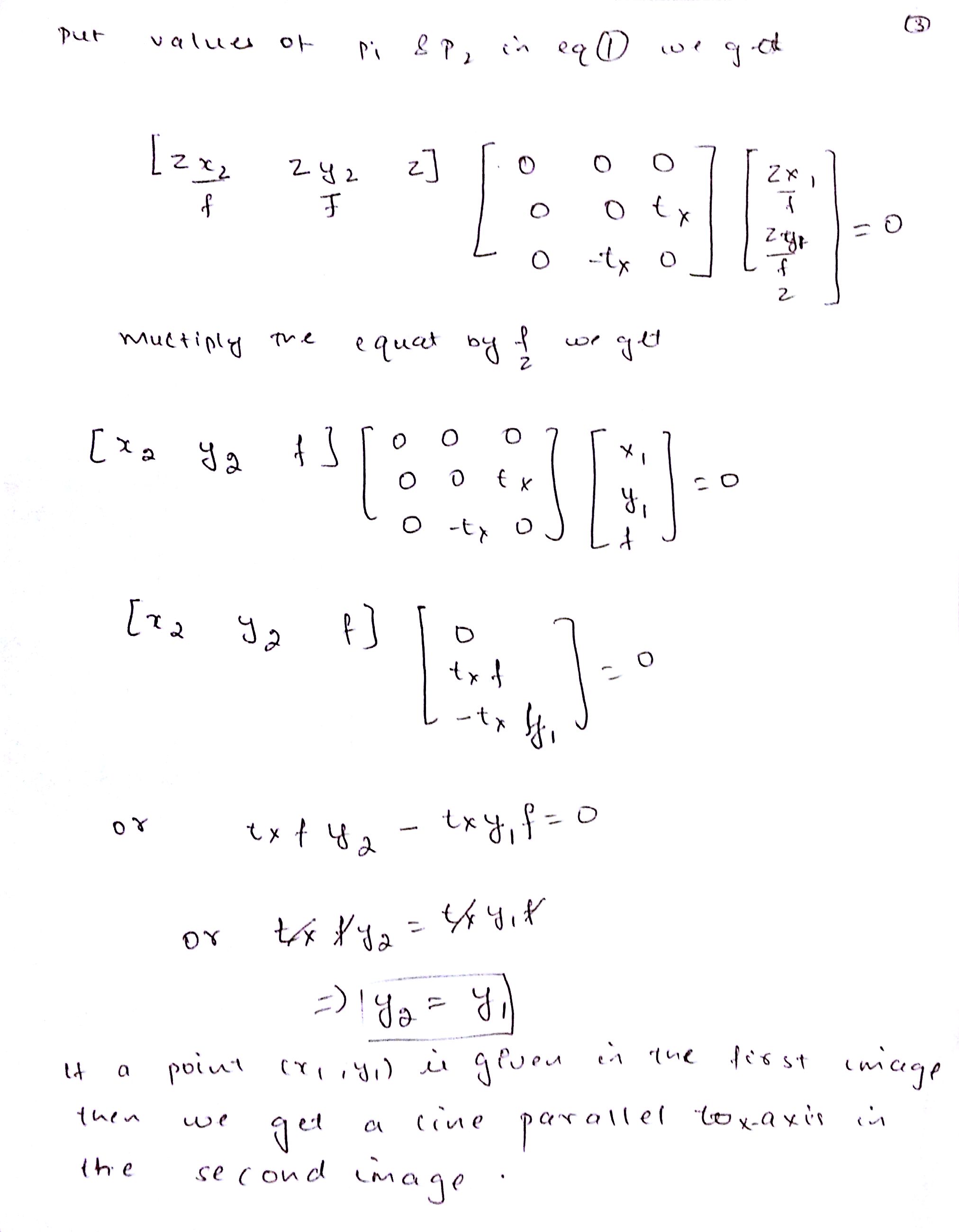
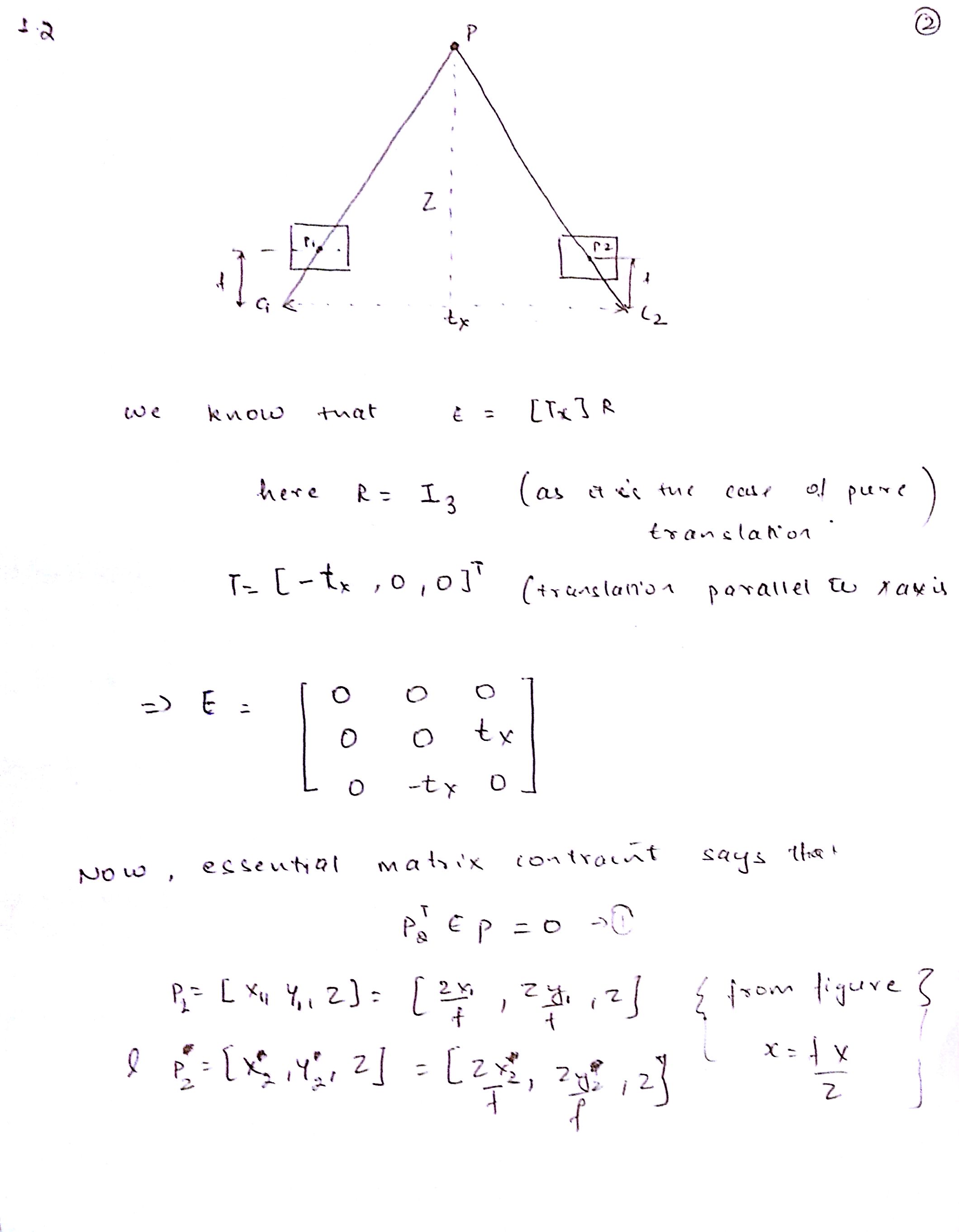
Instructor: Prof. Deva Ramanan

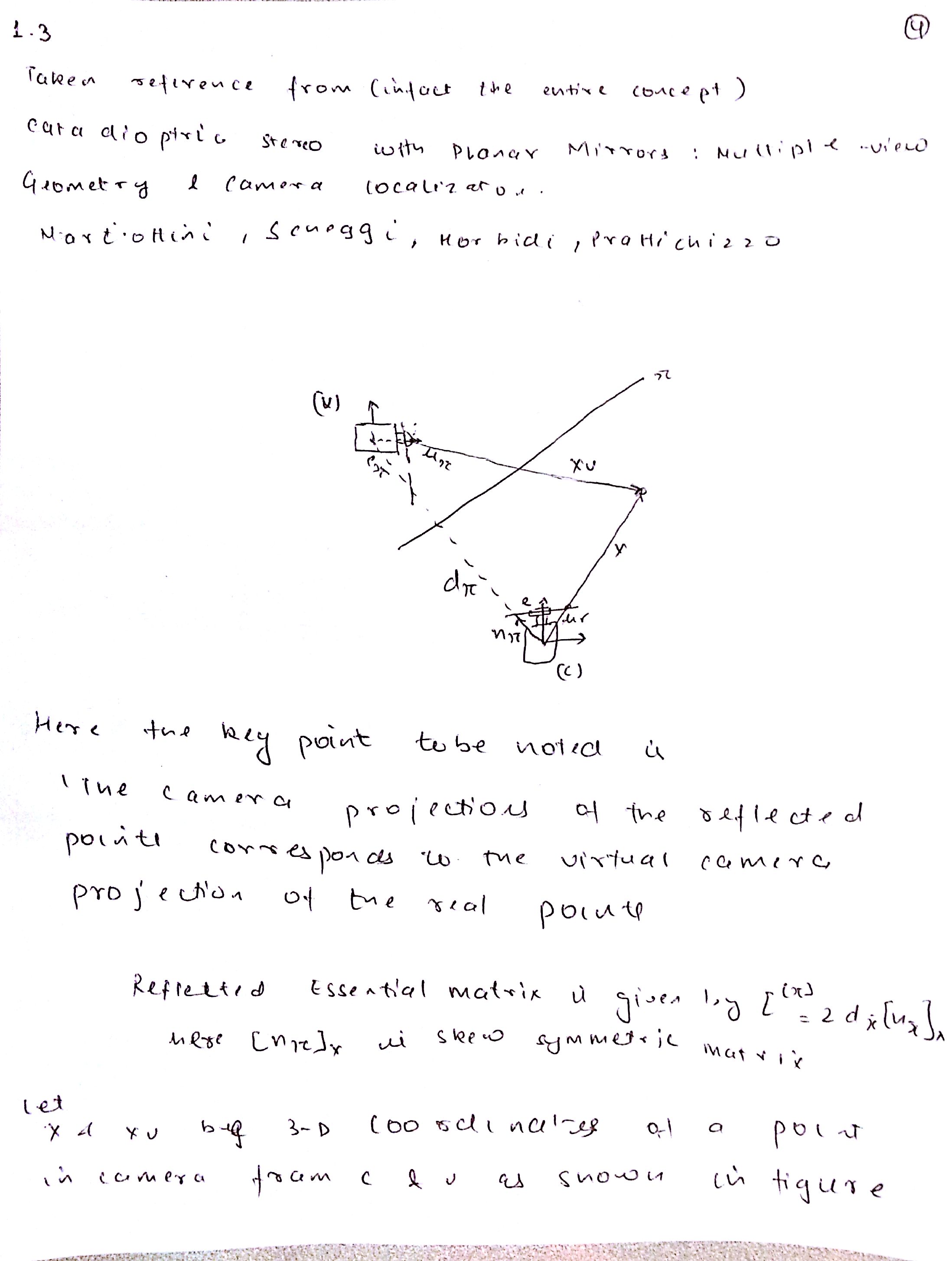
March 25, 2016

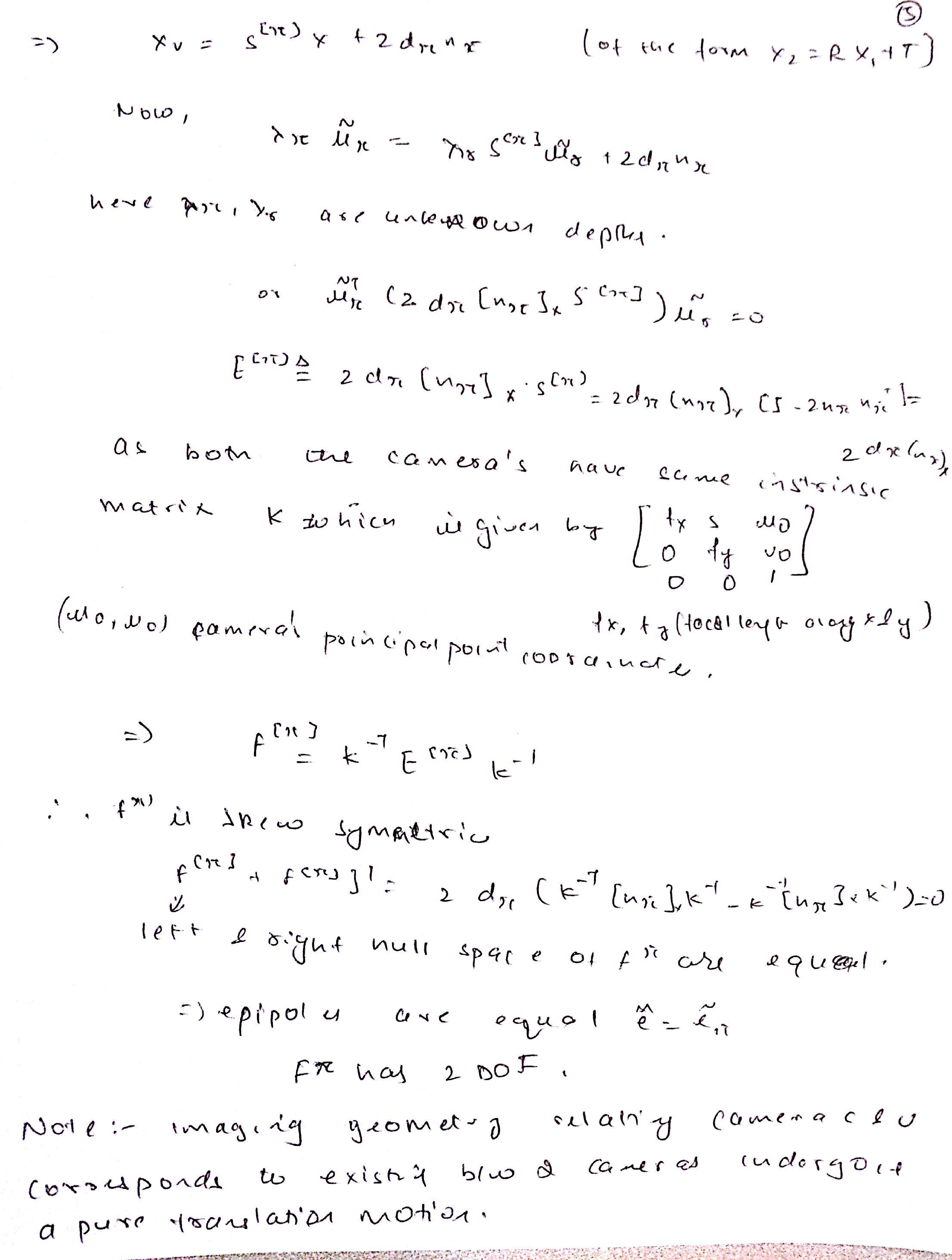
# 3d Reconstruction

## Theory

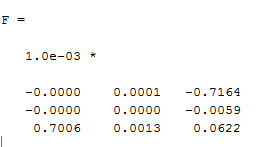


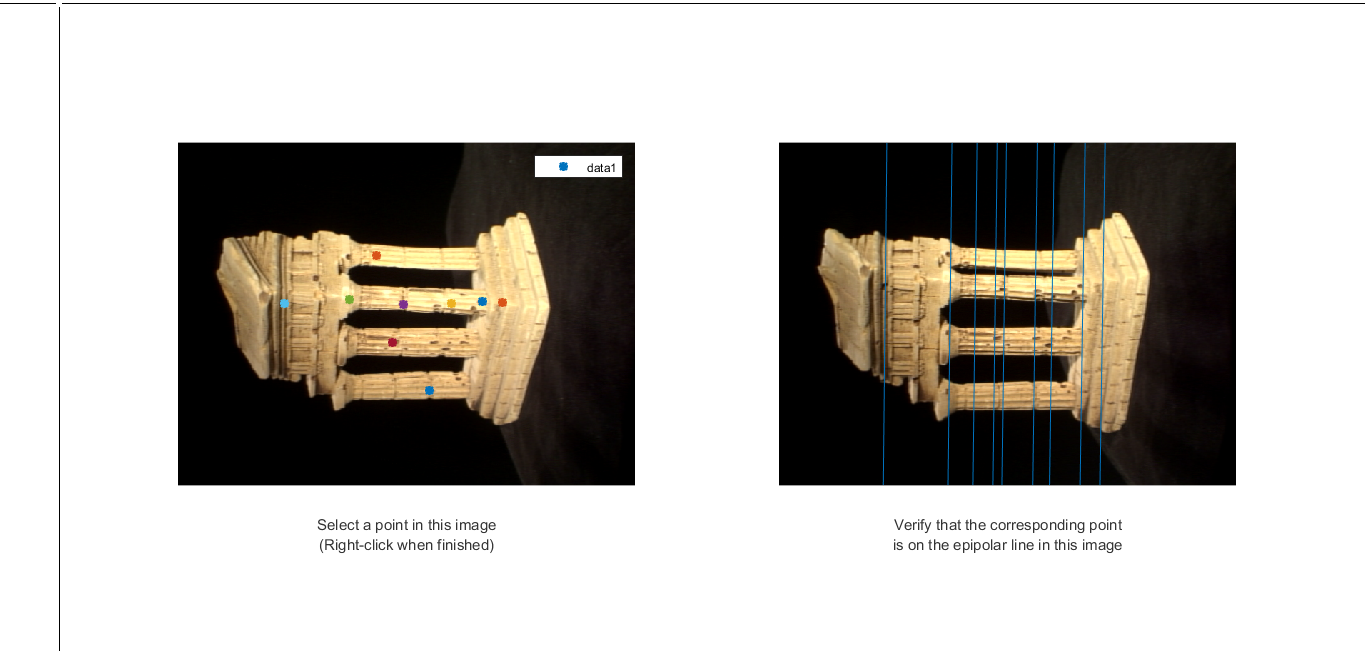






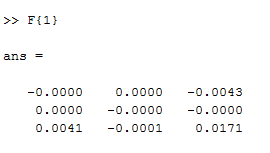
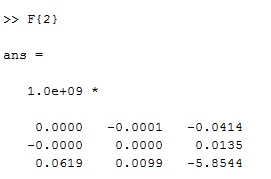
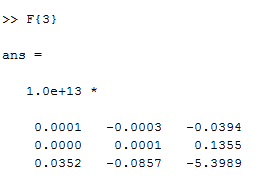
## 2.1 EightPoint



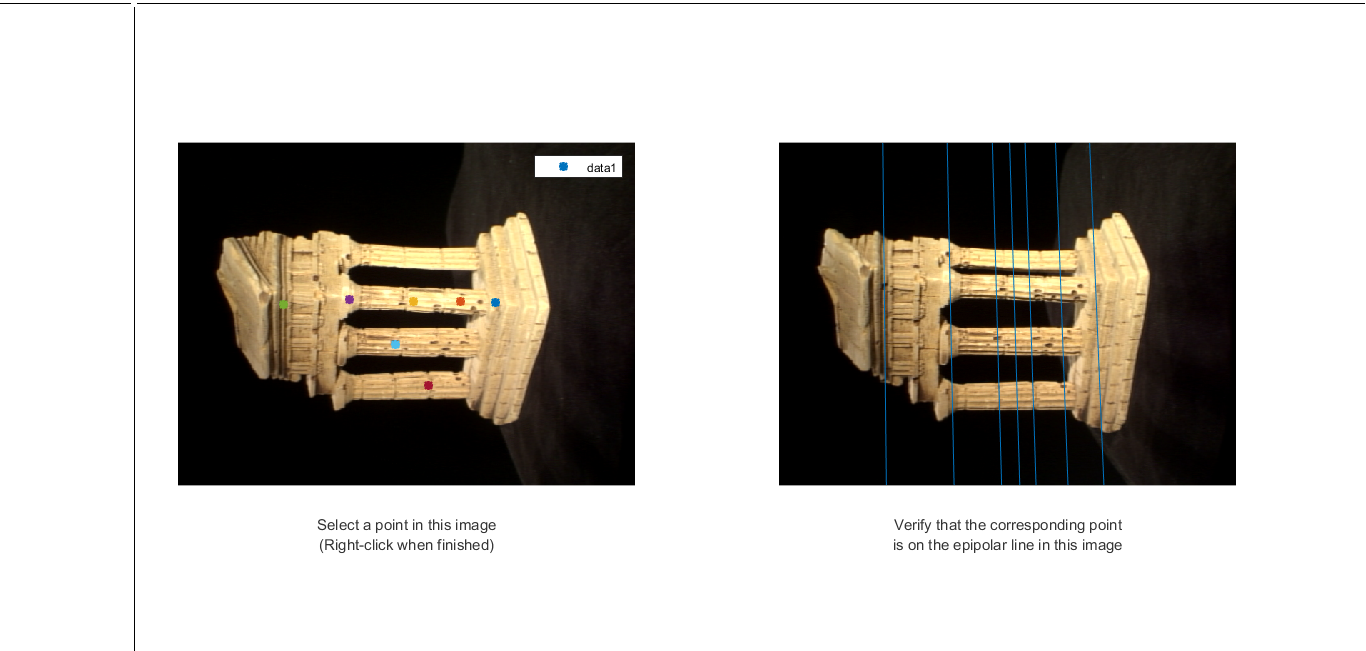


## 2.2 SevenPoint

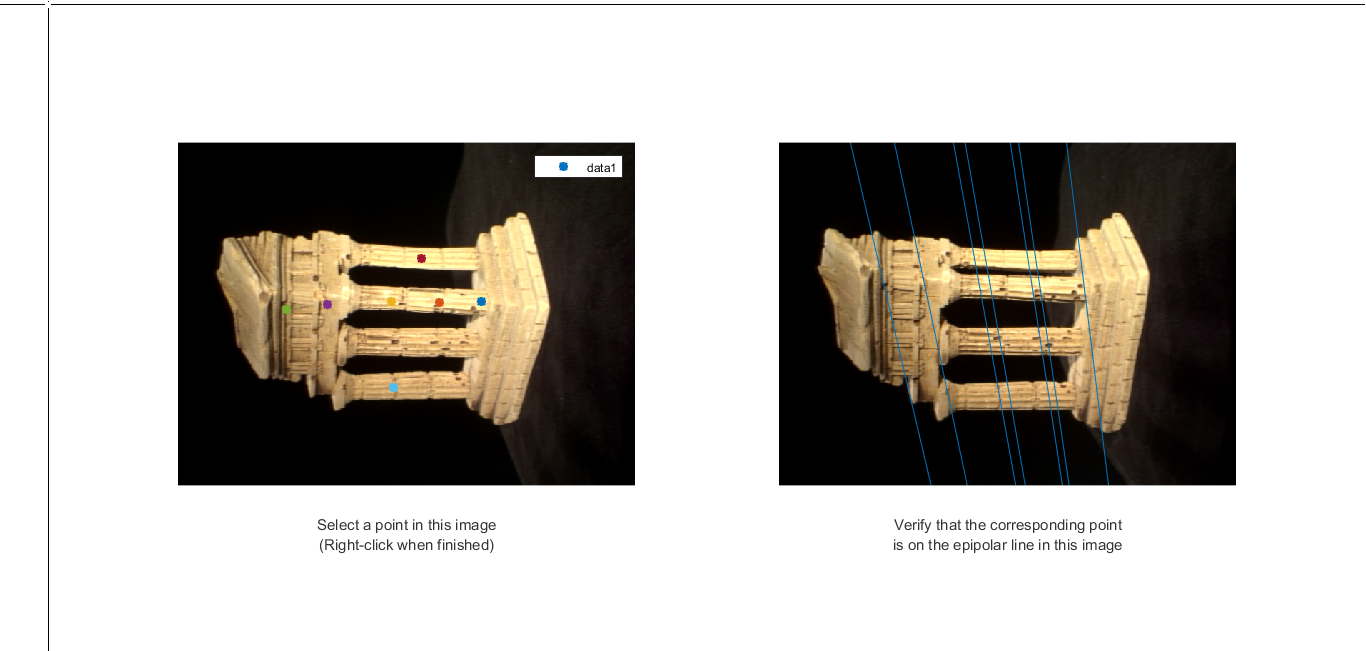
% Taken reference from https://www8.cs.umu.se/kurser/TDBD19/VT05/reconstruct-4.pdf

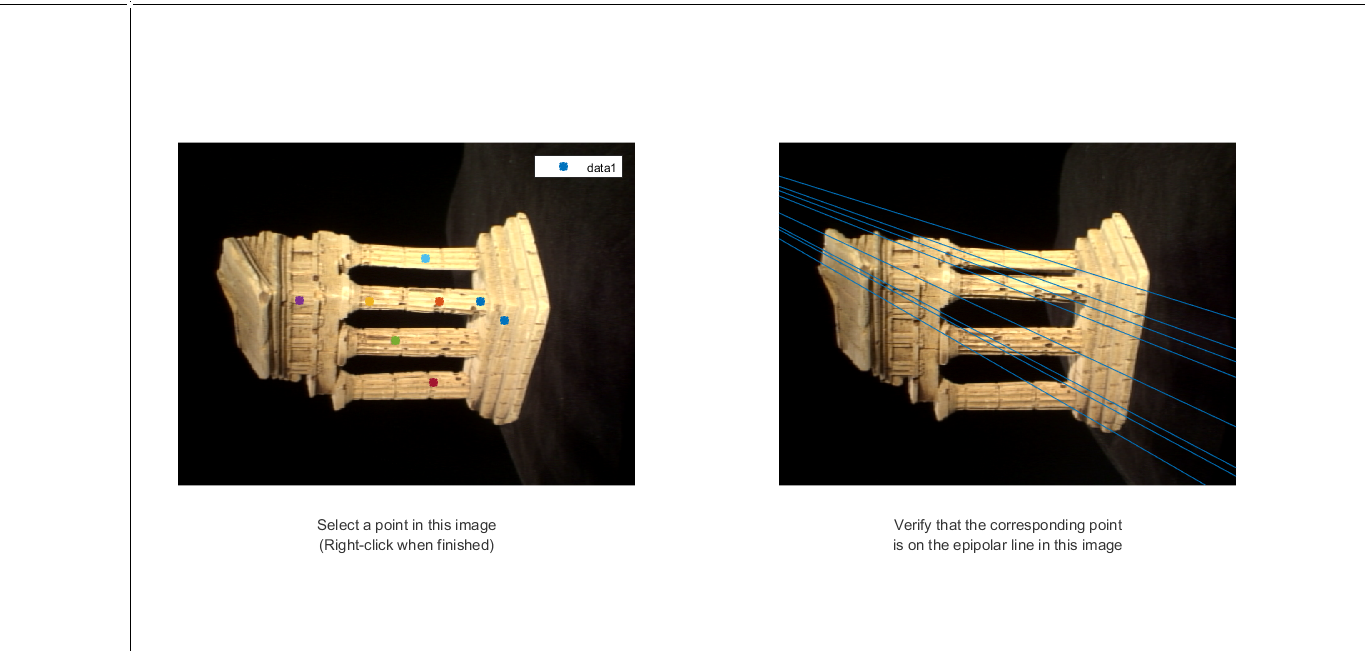
The images for these are attached in the serial order.



F{1}



F{2}

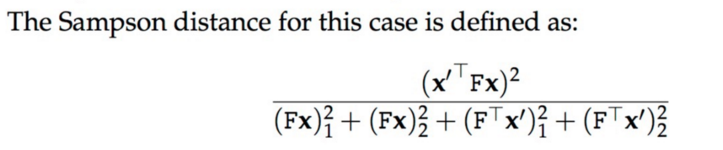


F{3}

## 2.X RANSACF

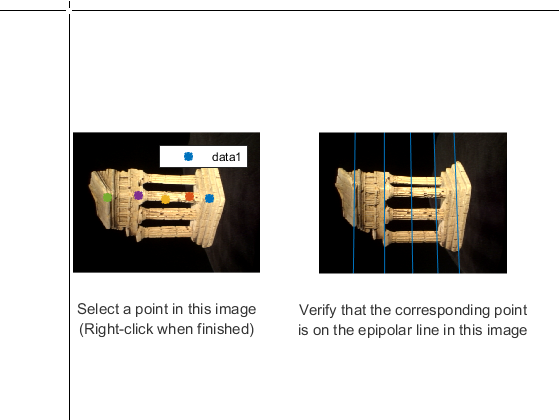
%Taken reference from Learning Computer Vision with OpenCV book

Error matrix used is Sampson distance:

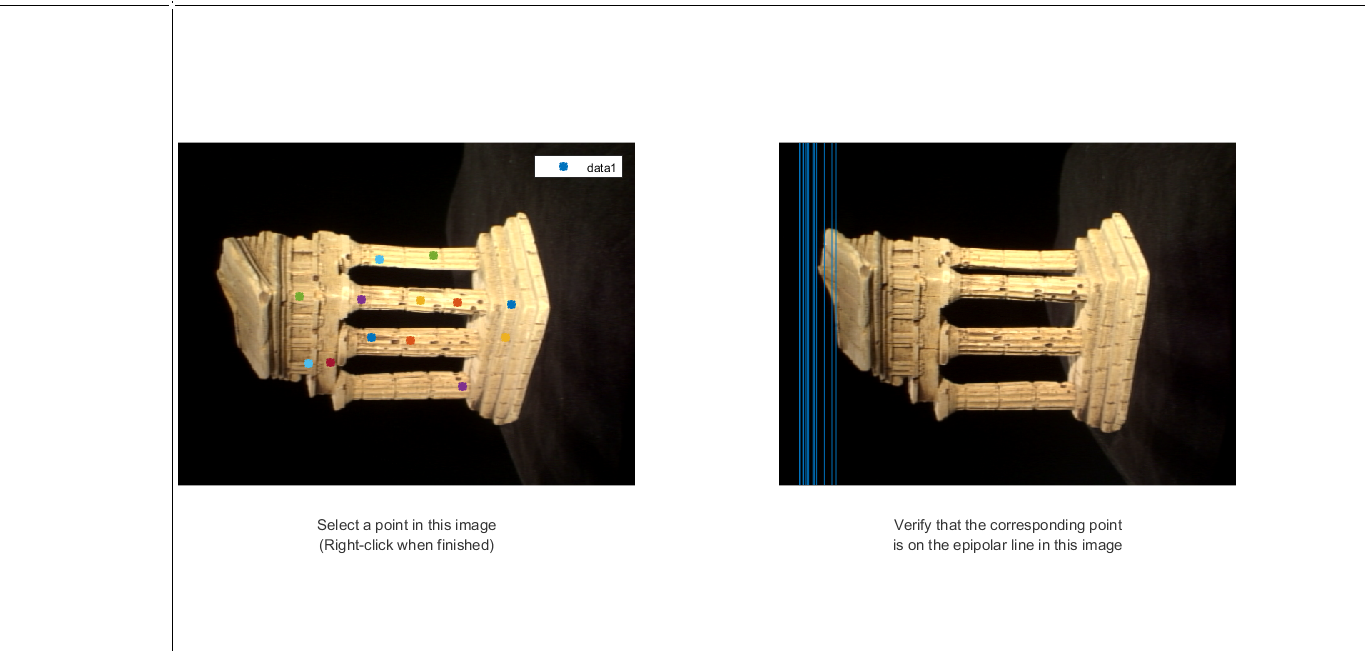


Took the error threshold to be the following. Points having distance less than threshold value are considered as inliers. error\_thresh = 1e-3;

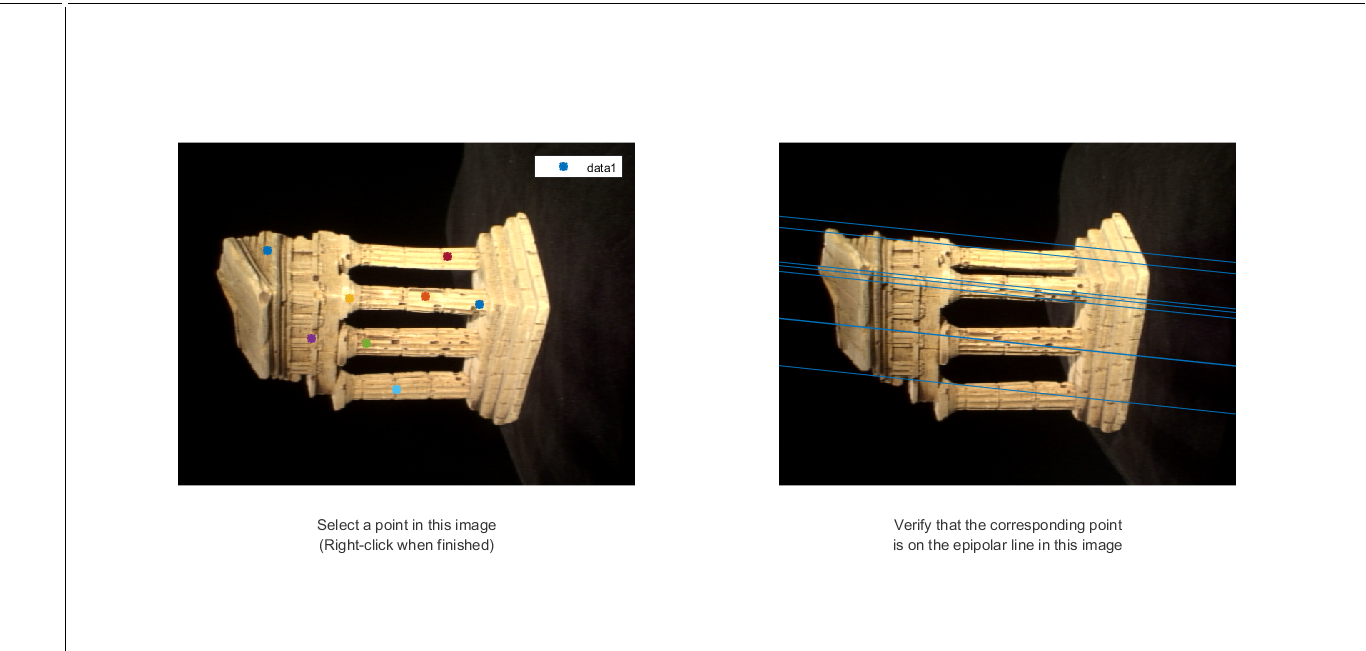
Output of Ransac:



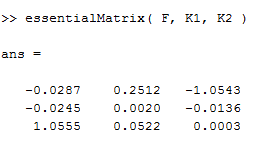
Output of eight point in the noisy case



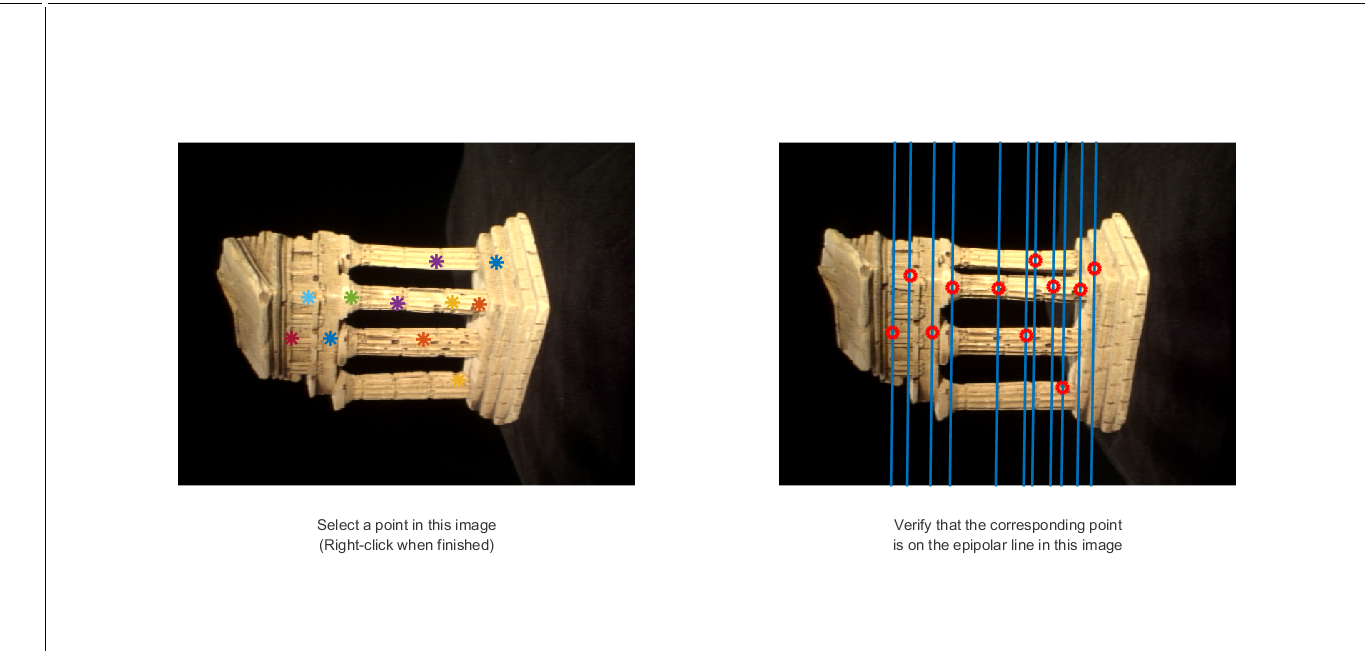
Output of Ransac in noisy case



## 2.3 Essential Matrix



## 2.6 EpipolarCorrespondance



## 2.7 Point Cloud

