

# Digital Image Processing HW1

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### 1 Question 1

- a Rigid(translation + rotation) because the document in a scanner only has freedom to translate and rotate. The final image will be a rigid transformation of the first and will not be scaled in any direction.
- b Rigid(translation + rotation) along with equal scaling because resolutions for X and Y are the same in both the scanners. There will be equal change in resolution in both axes and the rigid transformation takes care of rotation and translation.
- c Since we take the back side of the image and reflect it to match the front side, we use an affine transformation (since reflection is multiplication by an orthogonal matrix). The affine transformation also takes care of potential errors in positioning of the images in the scanners.