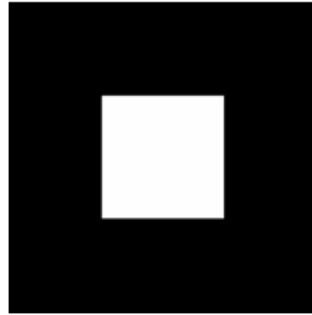


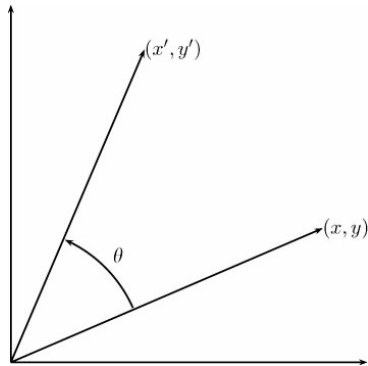
Homework 5 (Due: 4/4)

- (1) Create an image consisting of a white square with a black background, e.g.,



- (2) Rotate the image by 30 degrees. Use (a) rotation with neighbor interpolation, and (b) rotation with bilinear interpolation.
- (3) Compare the two results.

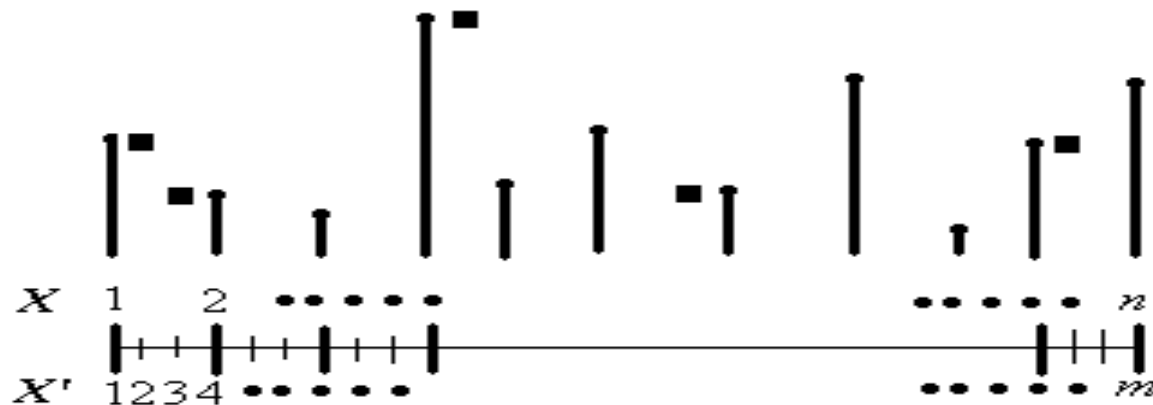
- Image Rotation



$$\begin{bmatrix} x' \\ y' \end{bmatrix} = \begin{bmatrix} \cos \theta & -\sin \theta \\ \sin \theta & \cos \theta \end{bmatrix} \begin{bmatrix} x \\ y \end{bmatrix}$$

$$\begin{bmatrix} x \\ y \end{bmatrix} = \begin{bmatrix} \cos \theta & \sin \theta \\ -\sin \theta & \cos \theta \end{bmatrix} \begin{bmatrix} x' \\ y' \end{bmatrix}$$

- Nearest Neighbor Interpolation



- Bilinear Interpolation

