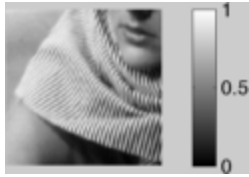





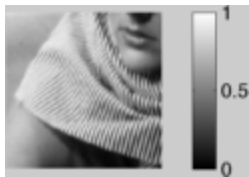
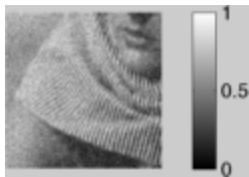
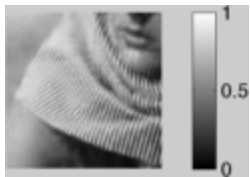





Q1

a)

Original Image	Noisy Image	Denoised image	RMSE
			9.8449
			9.8283

b)

Original Image	Noisy Image	Denoised Image	RMSE
			7.7824
			7.7051

c)

Bilateral Filter

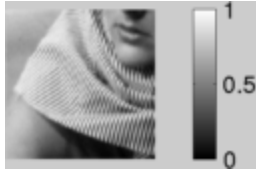


Original Image	Noisy Image	Denoised Image	RMSE
			14.231

Image from (a)		9.8449
Image from (b)		7.7824
Image from Bilateral Filter		14.231

In this PCA based approach, we know the information regarding noise (Gaussian, mean, variance), which is used during the update of the eigen coefficients. Recovery depends on how good the estimate of noise is, which in our case is apt.

In the Bilateral Filter based approach, we use no information regarding the noise, and do the general intensity and spatial based filtering.

PCA is a state of art approach, hence as we see the RMSE of image got through PCA approach is lower than that of Bilateral Filter (tuned for the best results). Therefore, PCA approach does a better job of recovery from noise in our case.