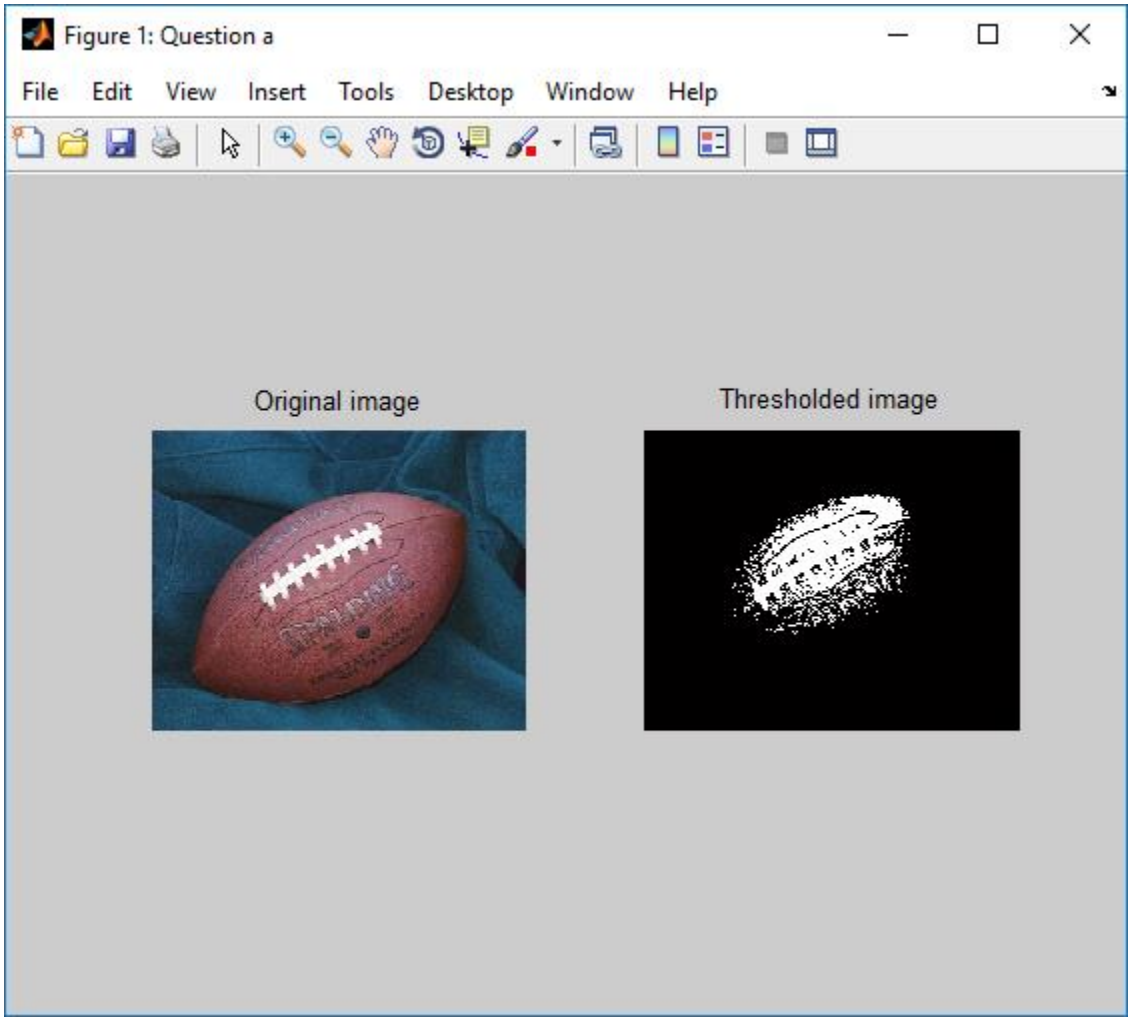
CO543 – Image Processing Lab 2

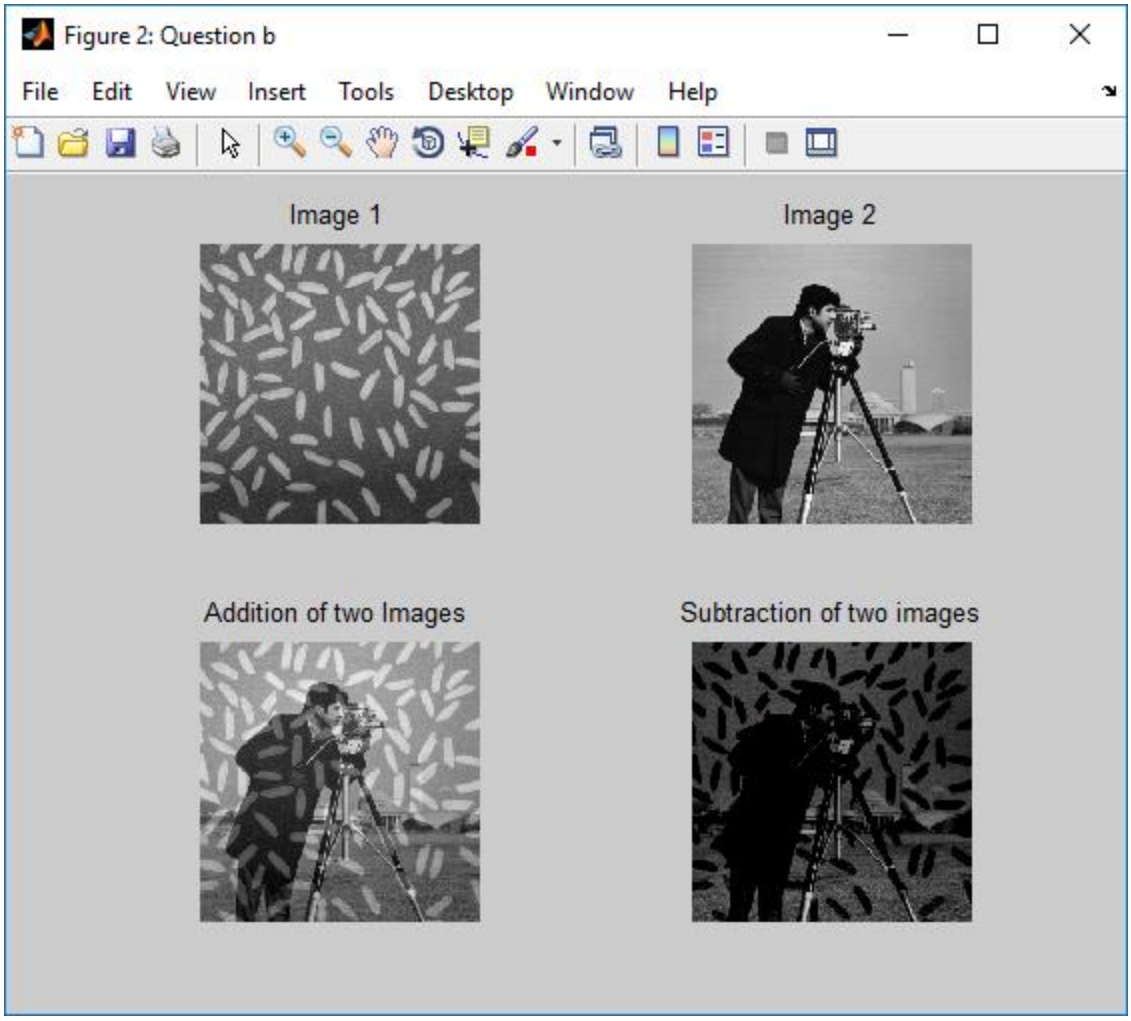
a) Image thresholding

Write a function to perform image thresholding using point processing taking the image file and the threshold value from the user.



b) Image arithmetic operations

Read two images and perform addition and subtraction.
I=I1+I2; # Addition of two
I=I1-I2; # Subtraction of two images
And show the images.



c) Write simple programs in the same script to demonstrate

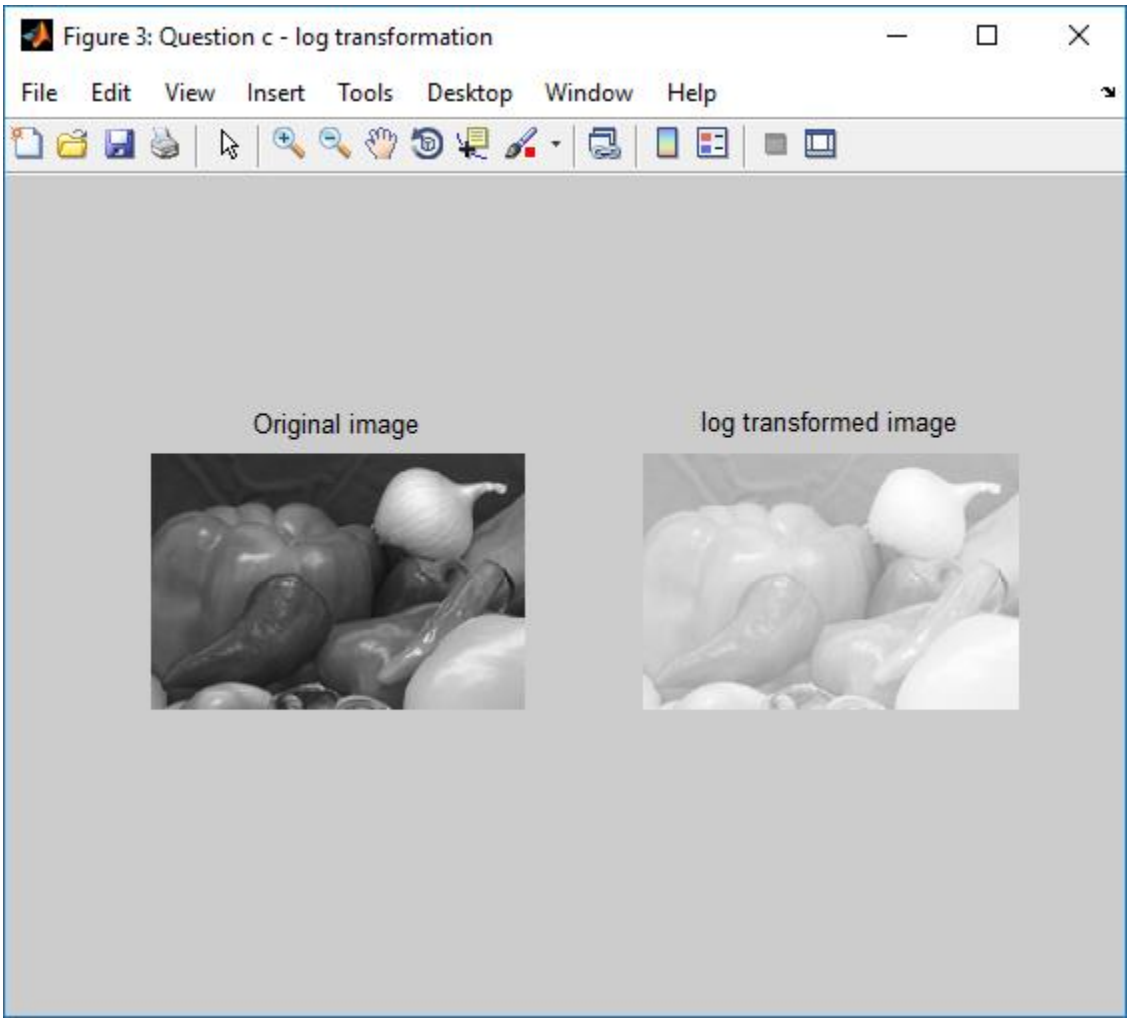
a. Log transformation

b. Power transformation

c. Gray level slicing

d. Bit plane slicing

Show the original and resultant images in same figure to compare them easily.



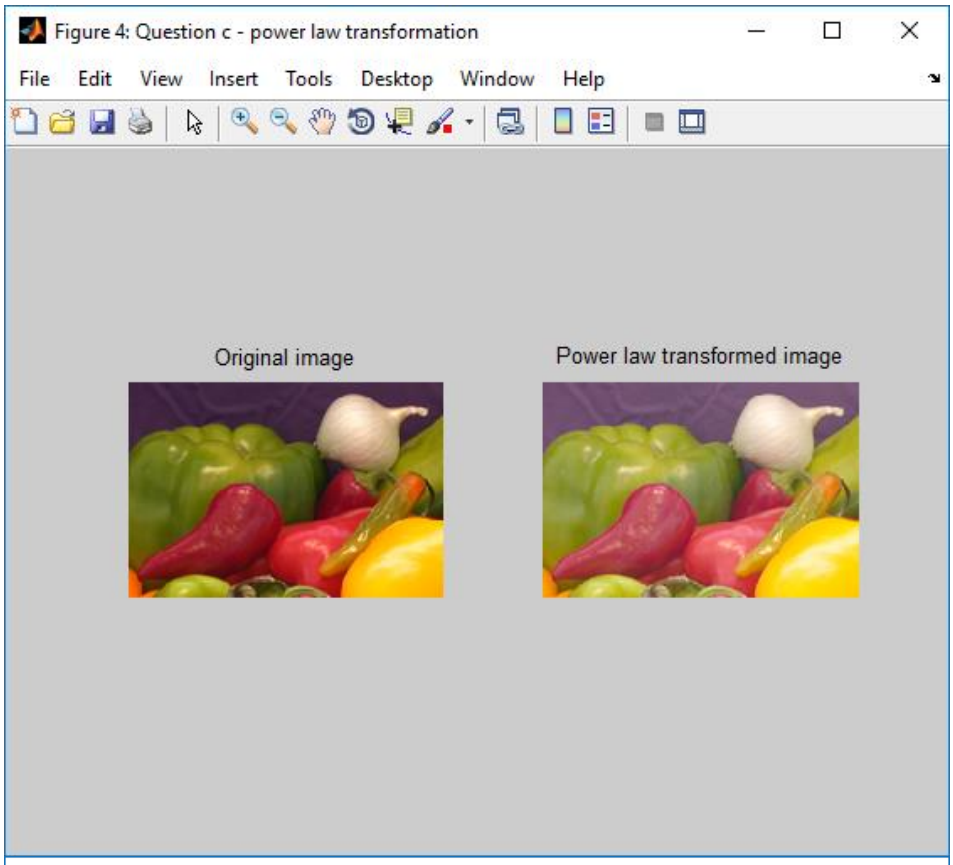


Figure 4: Question c - power law transformation
File Edit View Insert Tools Desktop Window Help
Original image
Power law transformed image

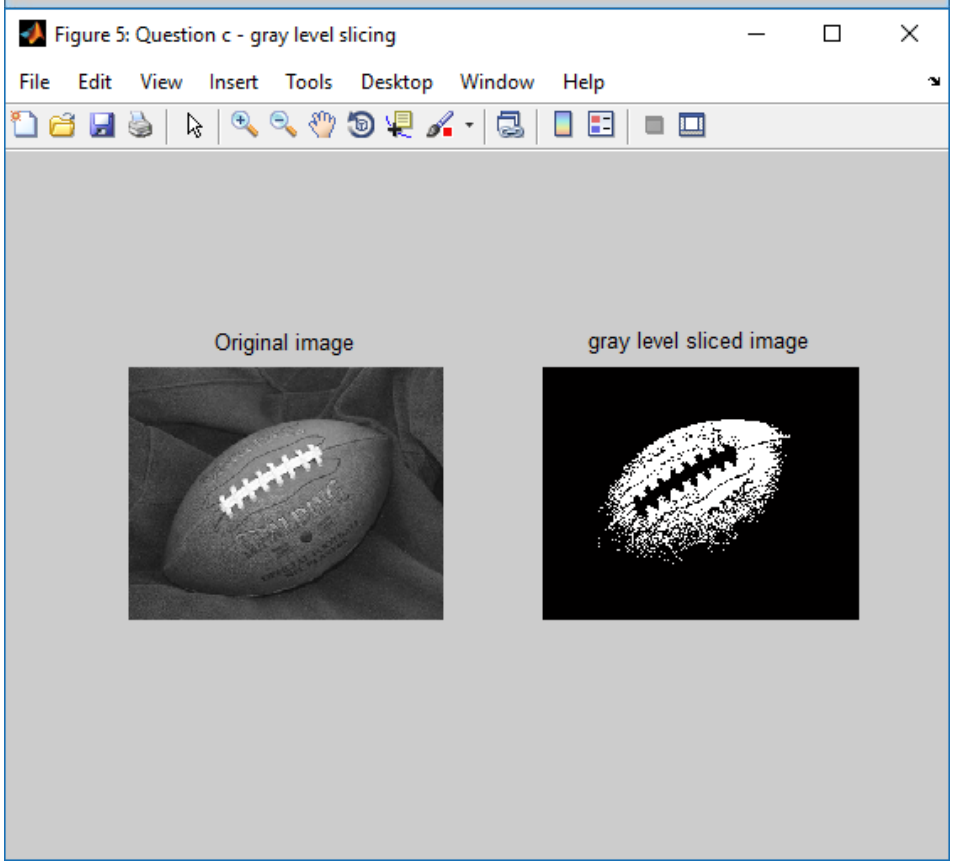


Figure 5: Question c - gray level slicing
File Edit View Insert Tools Desktop Window Help
Original image
gray level sliced image

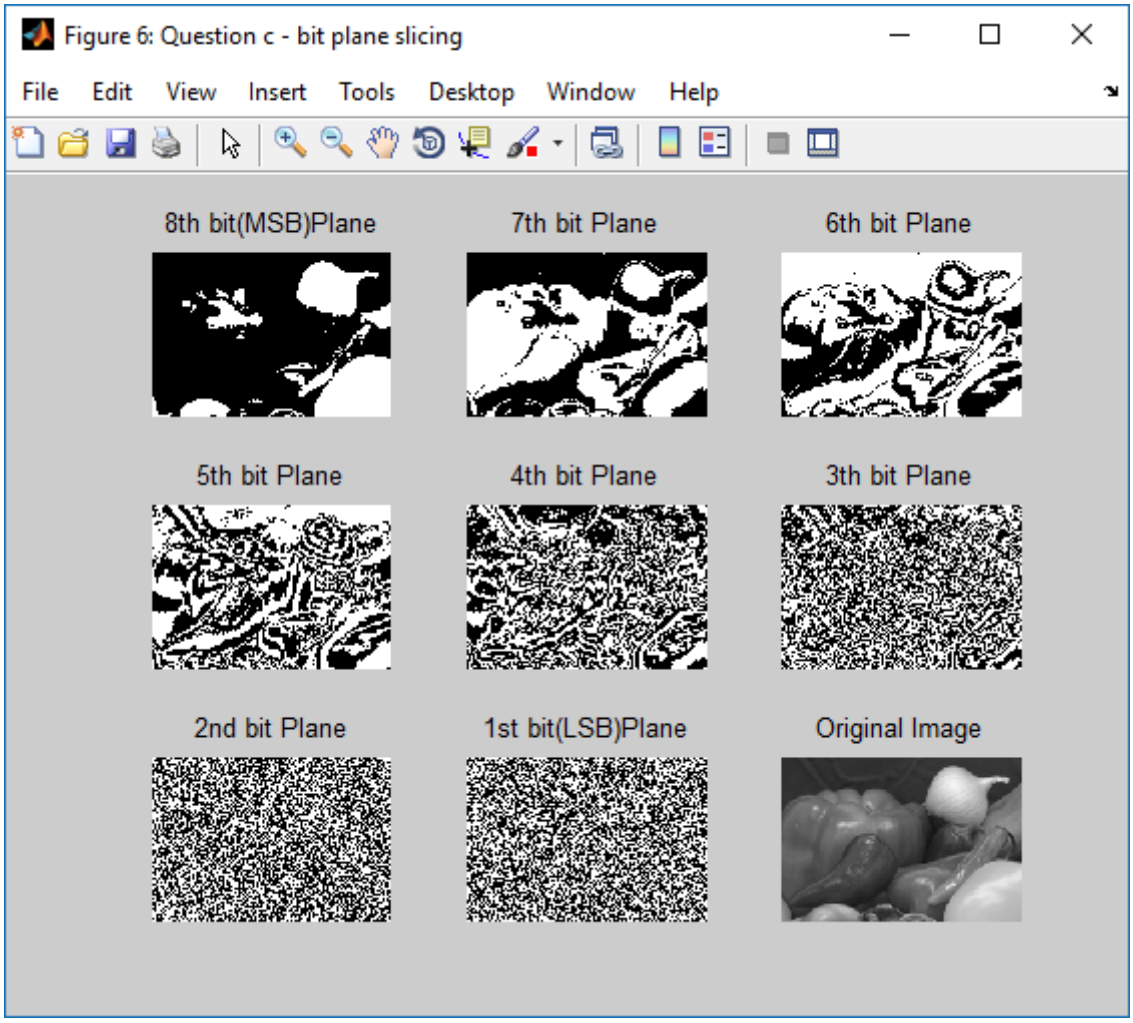
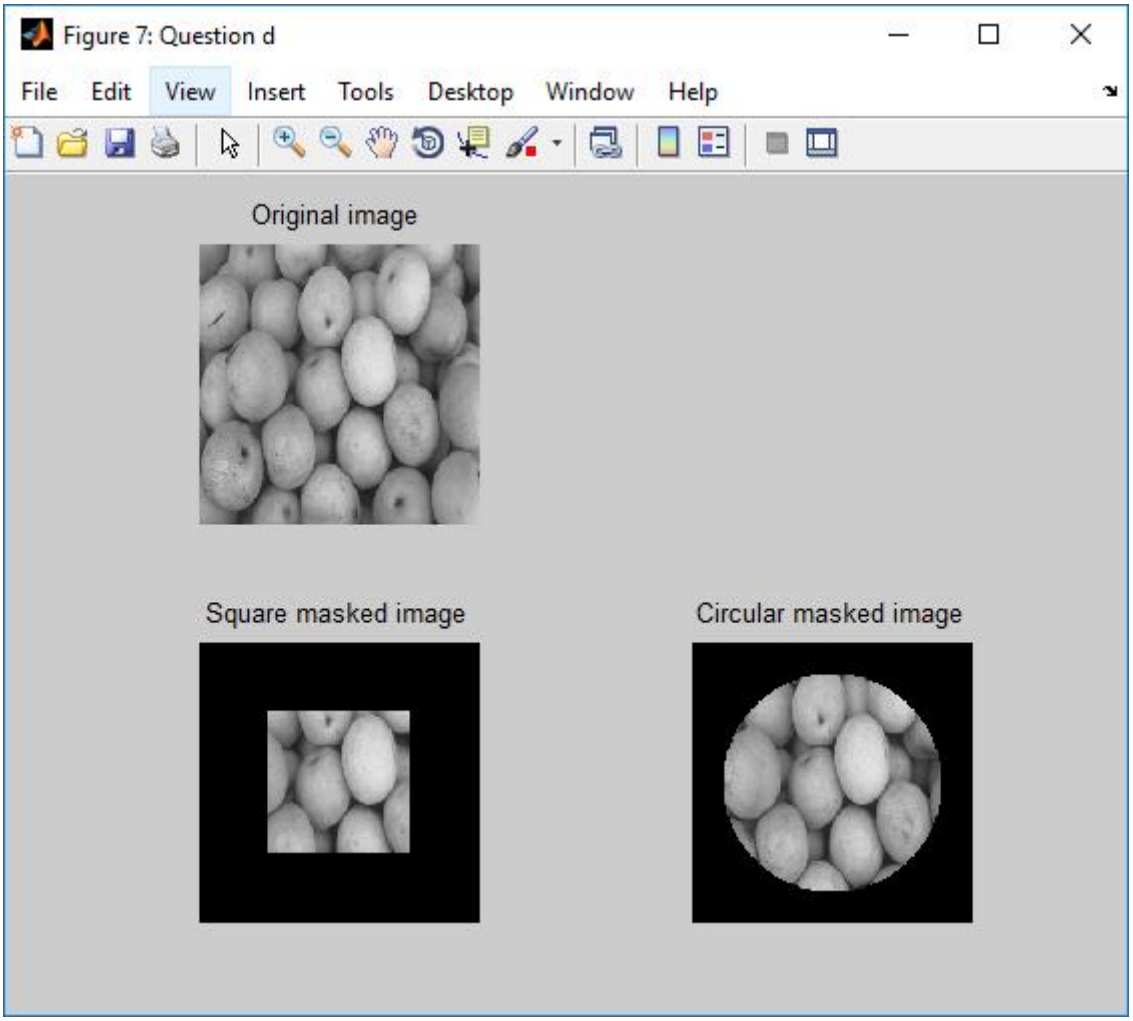


Figure 6: Question c - bit plane slicing
File Edit View Insert Tools Desktop Window Help
8th bit(MSB)Plane
7th bit Plane
6th bit Plane
5th bit Plane
4th bit Plane
3th bit Plane
2nd bit Plane
1st bit(LSB)Plane
Original Image

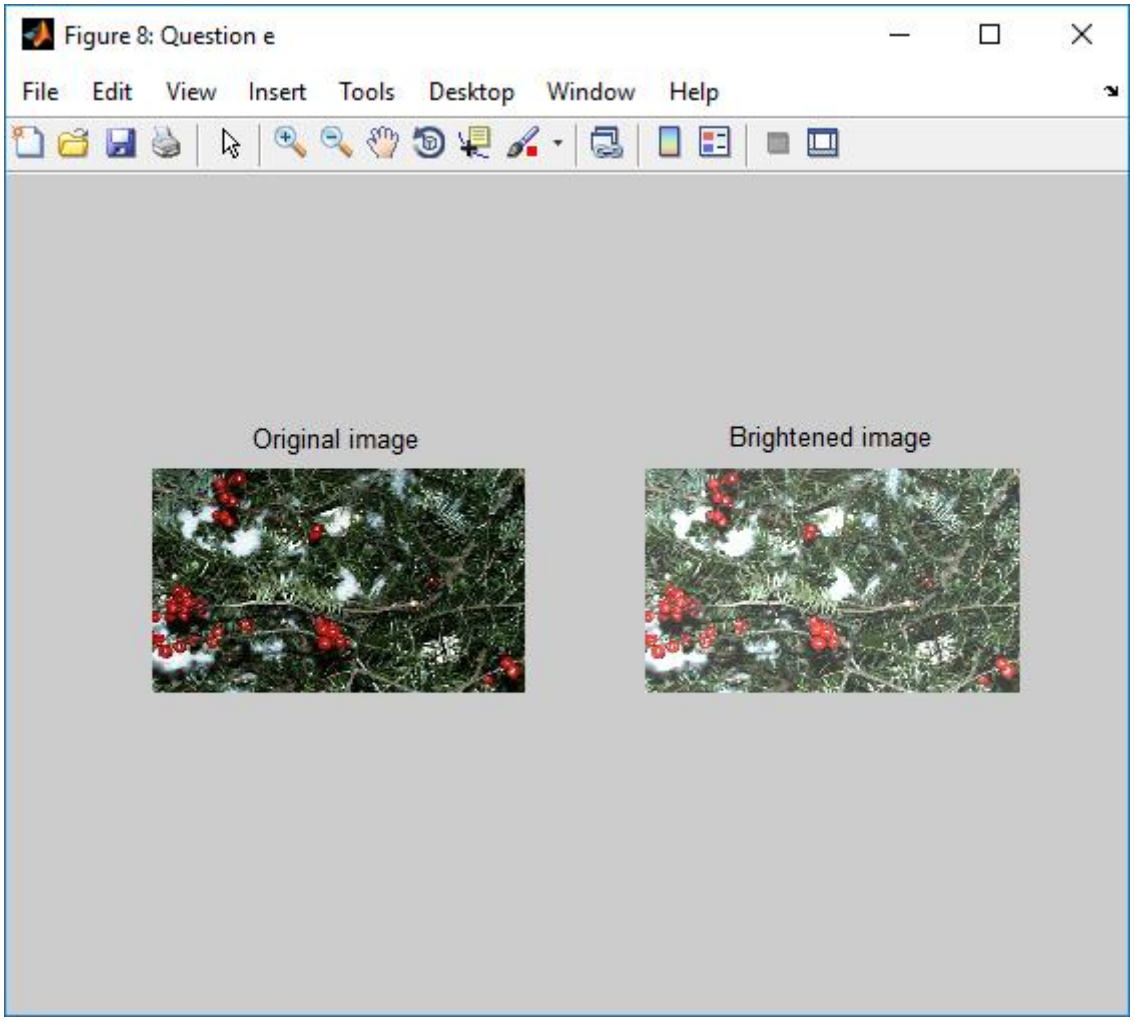
d) Masking

Write a program to read any image, resize it to 256x256. Apply the masks shown in following figures so that only the middle part of the image is visible.



e) Brightness

Write your own Matlab function (or a code snippet) and use it to increase brightness of given image. (Hint: Use Image arithmetic operations)



f) Histogram

Use inbuilt Matlab function to display the histogram of a given image.