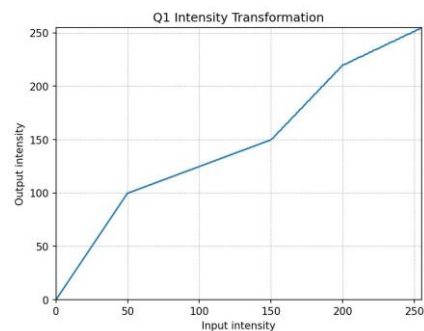# Image Processing Assignment Results

Question 1

emma_intensity_transformation
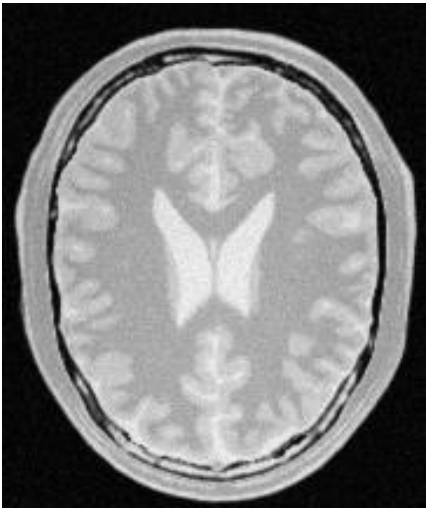

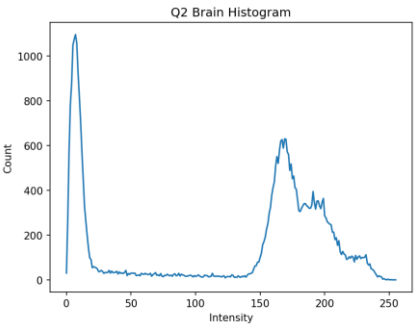**emma_original**

emma_mapped
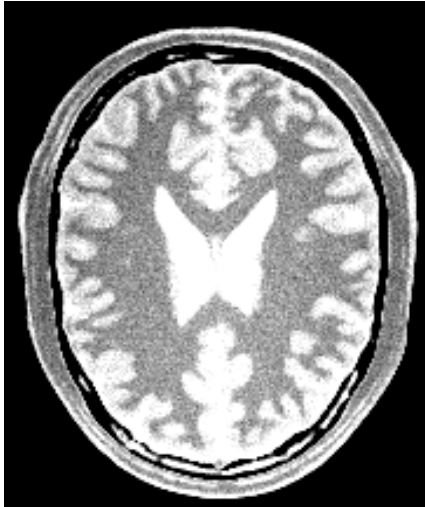
Question 2

q2_original
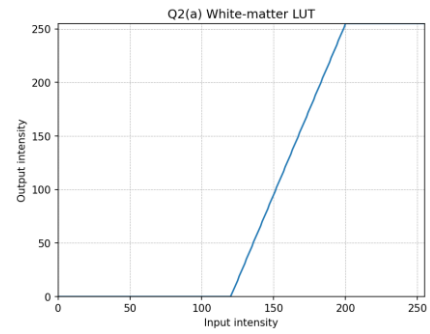
q2_histogram

q2_gray_matter
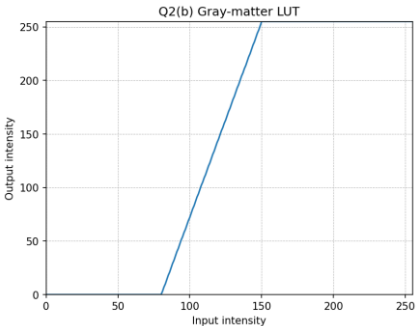
q2_gm_transfer
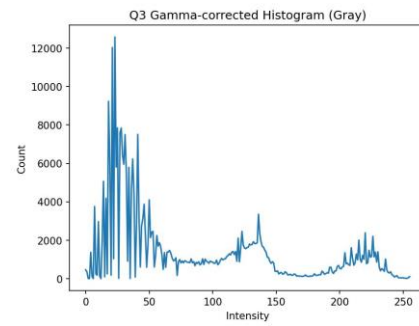
qq2_white_matter

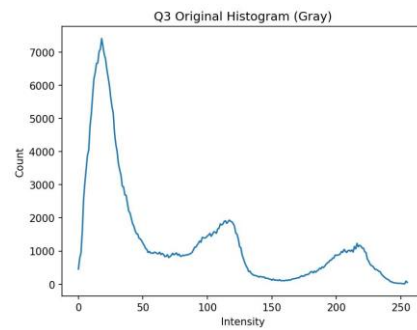q2_wm_transfer

Question 3

q3_gamma

q3_hist_gamma

q3_original

q3_hist_orig

Question 4

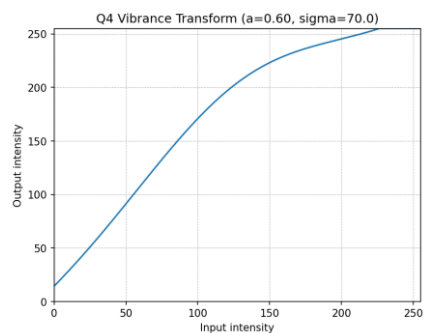q4_spider_original

q4_spider_h

q4_spider_s

q4_spider_v

q4_spider_vibrance

q4_spider_transfer

Q4 Vibrance Transform (a=0.60, sigma=70.0)

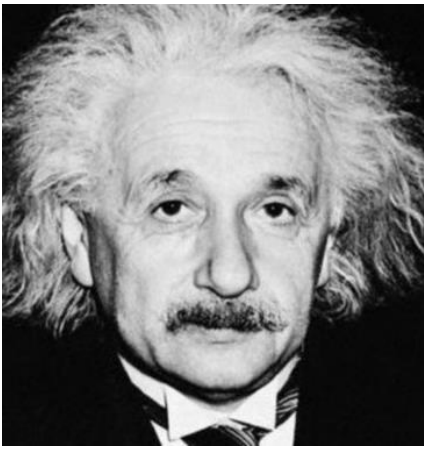## Question 5

q5_original

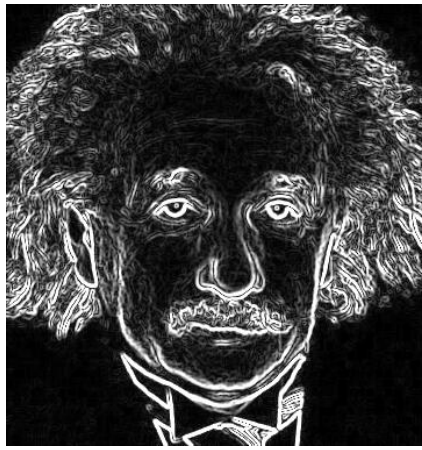q5_h

q5_s

q5_v

q5_mask

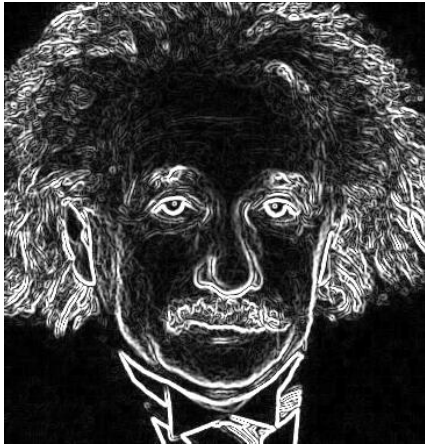
q5_result

Question 6
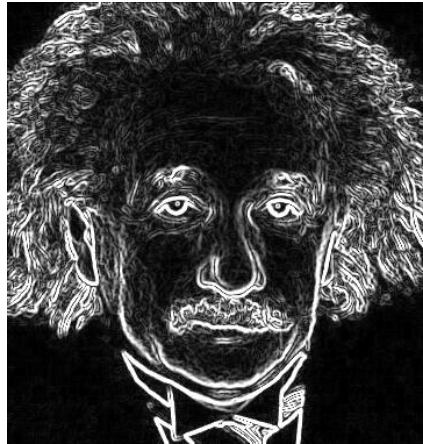

q6_orig

q6_a_mag

q6_b_mag

q6_c_mag

Question 7

q7_pair1_blx4

q7_pair1_large
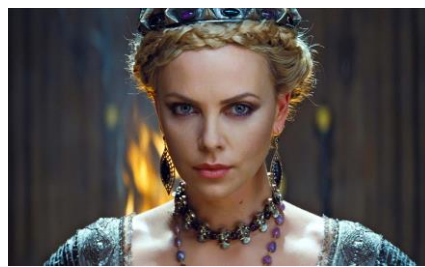

q7_pair1_nnx4

q7_pair2_blx4
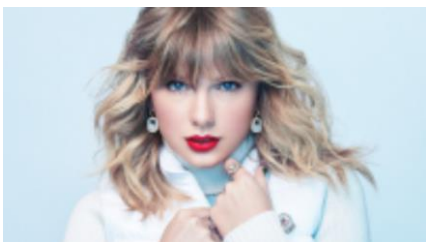

q7_pair2_large

q7_pair2_nnx4

q7_pair3_blx4

q7_pair3_large

q7_pair3_nnx4
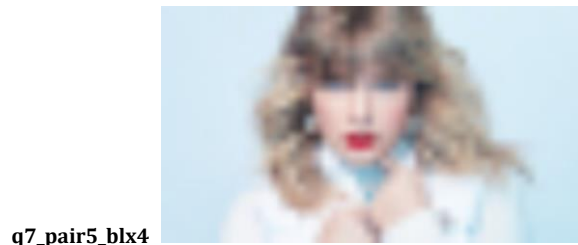

q7_pair4_blx4

q7_pair4_large

q7_pair4_nnx4

q7_pair5_blx4

q7_pair5_large

q7_pair5_nnx4

Image Pair	SSD (Nearest Neighbor)	SSD (Bilinear)
pair1	0.02259	0.01019
pair2	0.01024	0.00291
pair3	0.01472	0.00568
pair4	0.00686	0.00527
pair5	0.01579	0.01062

Question 8

q8_original

q8_fg

q8_mask
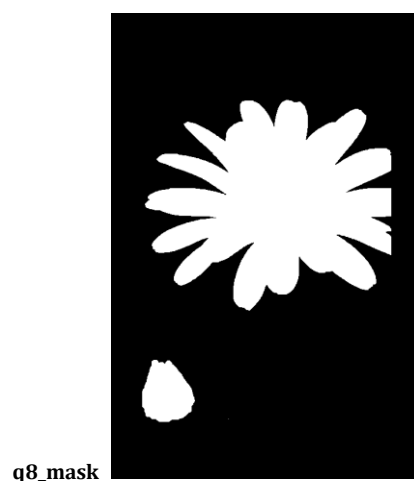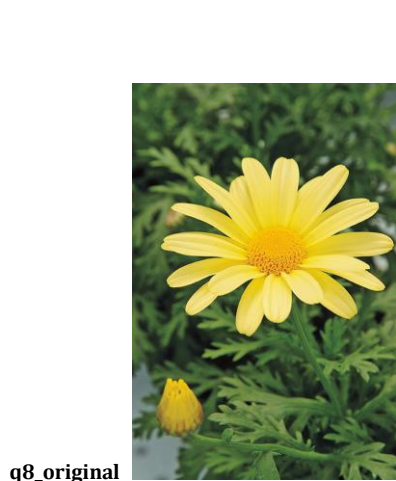
Dark rim occurs due to uncertain boundary labeling and blur mixing darker background near edges.

q8_bg   q8_enhanced

Question 9

q9_gauss_clean   q9_gauss_den   q9_gauss_th

q9_sp_clean   q9_sp_den   q9_sp_th
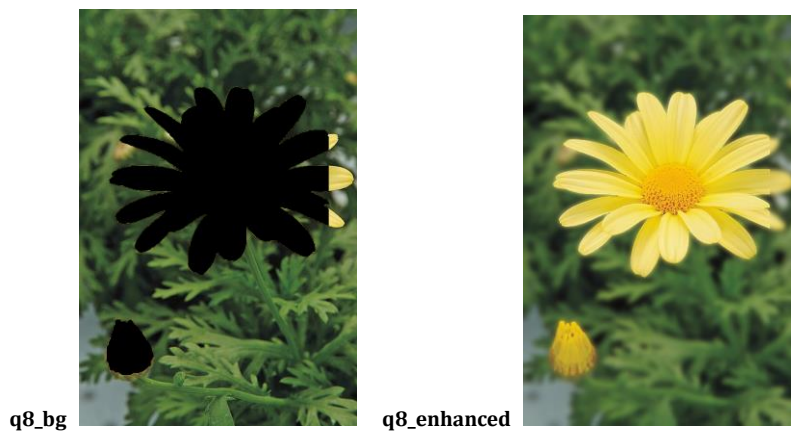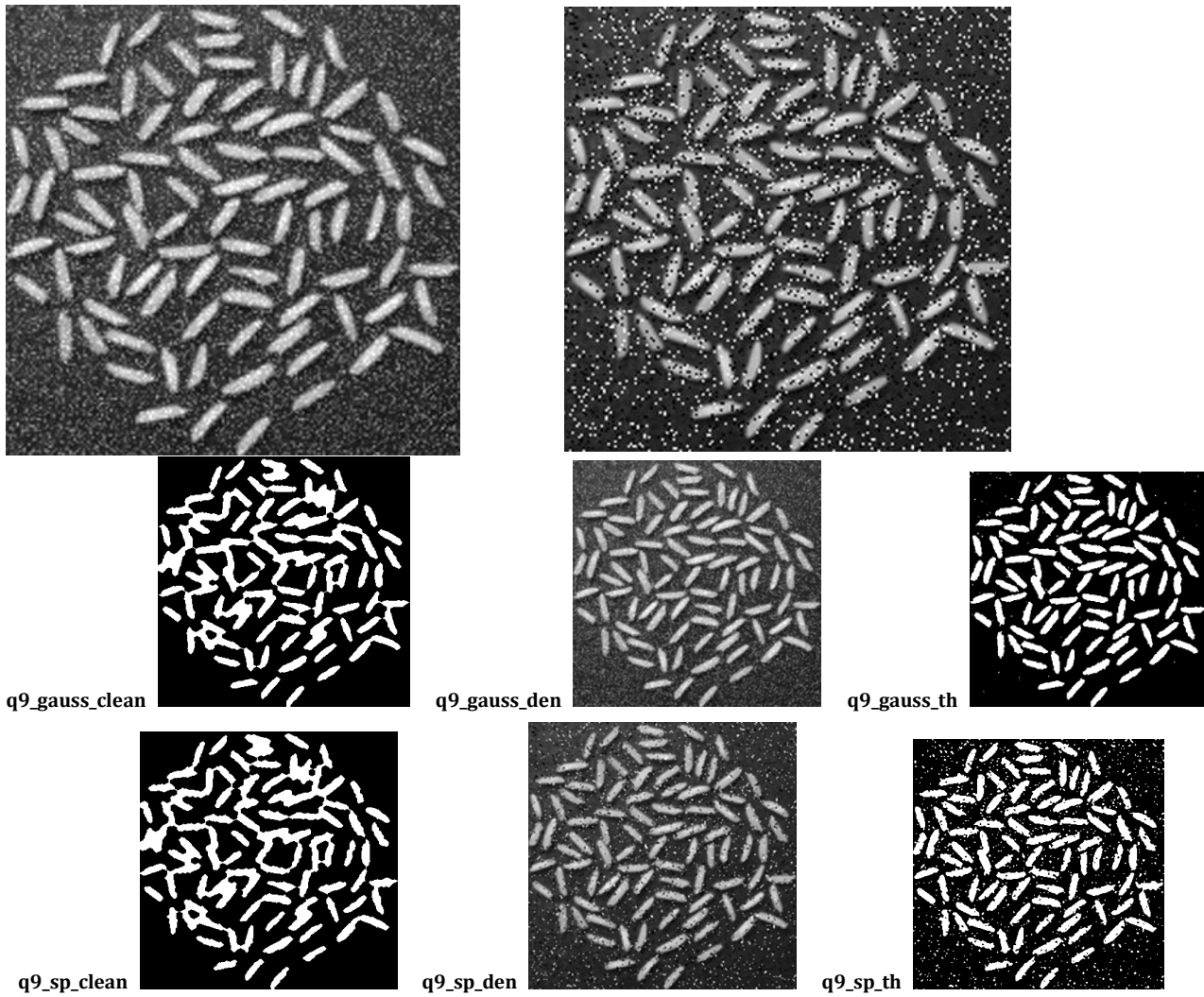
number of rice grains in Gaussian filter:36

number of rice grains in **salt-and-pepper noise removal filter**: 35

Question 10
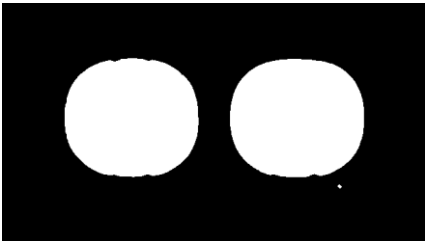

q10_original

q10_mask

q10_filled

Sapphire Area (mm²)

1	1,710.8
2	1,719.0