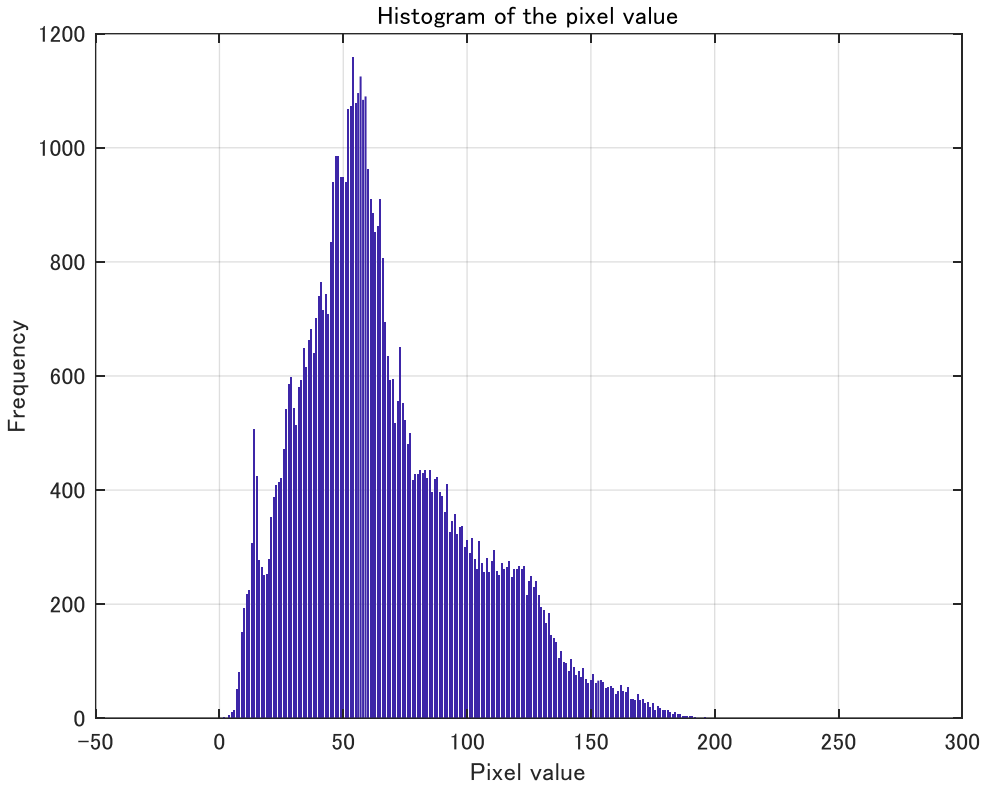
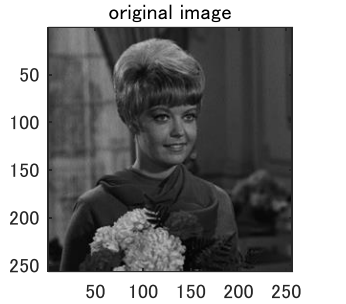
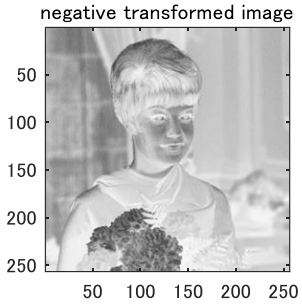
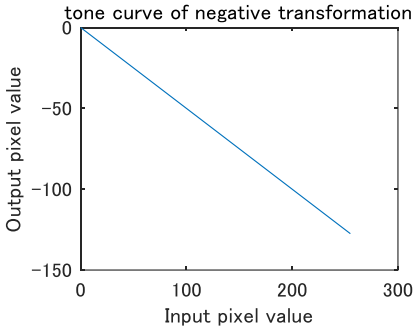
P5-A


Histogram of the pixel value
Frequency
Pixel value
0
200
400
600
800
1000
1200
−50
0
50
100
150
200
250
300

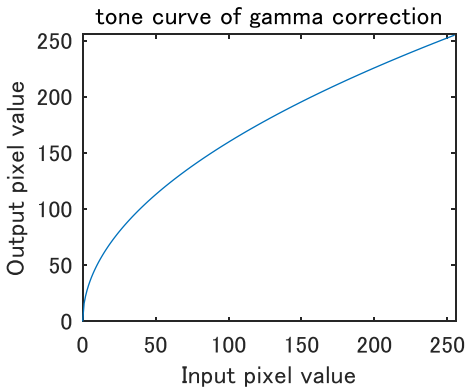
P5-B

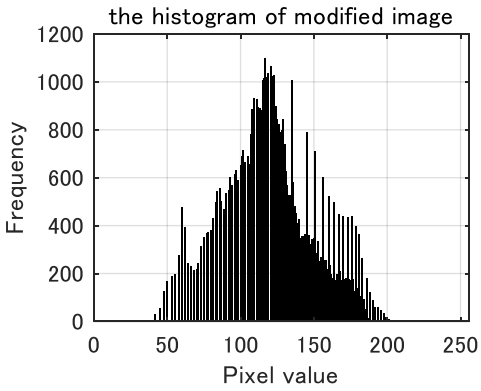

original image
50
100
150
200
250
50 100 150 200 250

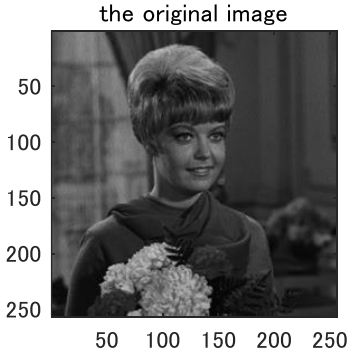

negative transformed image
50
100
150
200
250
50 100 150 200 250

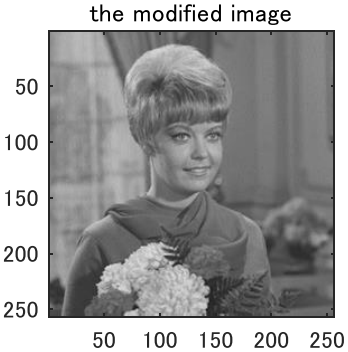

tone curve of negative transformation
Output pixel value
0
−50
−100
−150
0 100 200 300
Input pixel value

P5-C

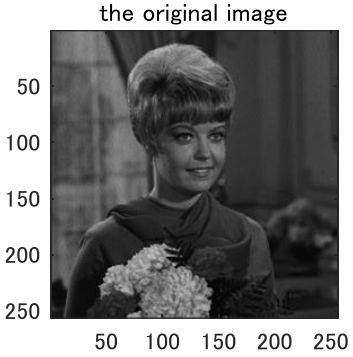

tone curve of gamma correction
Output pixel value
250
200
150
100
50
0
0 50 100 150 200 250
Input pixel value

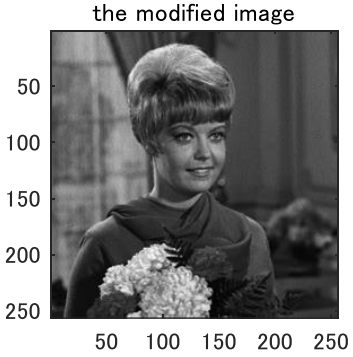

the histogram of modified image
Frequency
1200
1000
800
600
400
200
0
0 50 100 150 200 250
Pixel value

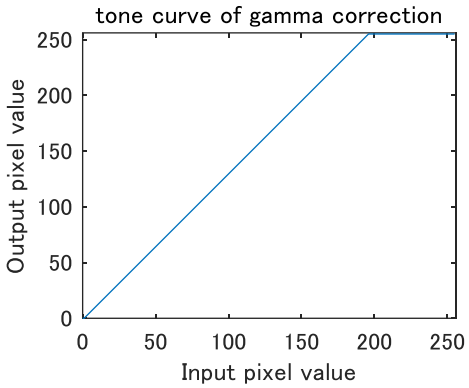

the original image
50
100
150
200
250
50 100 150 200 250


the modified image
50
100
150
200
250
50 100 150 200 250

P5-D


the original image
50
100
150
200
250
50 100 150 200 250


the modified image
50
100
150
200
250
50 100 150 200 250


tone curve of gamma correction
Output pixel value
0
50
100
150
200
250
0 50 100 150 200 250
Input pixel value