

Lab 2. Task 1- preparation task

Template for answers

Save this document as a .pdf document before submitting.

Student names and LiU-IDs: (Max 2 students per group):

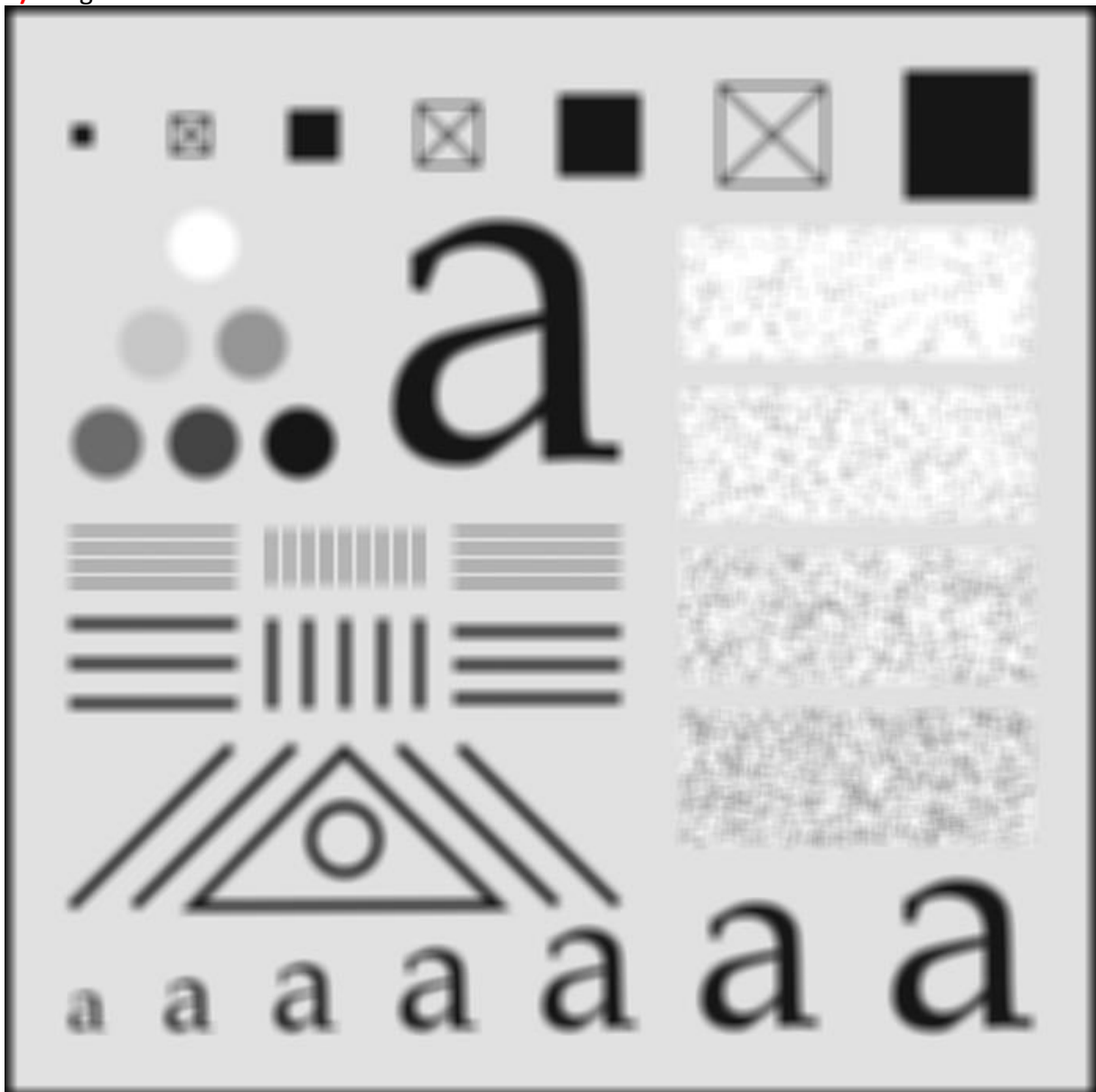
1. *Gayathri Naranath, gayna875*
2. *Todel Touma, todto215*

Submission date: 22/11-2023

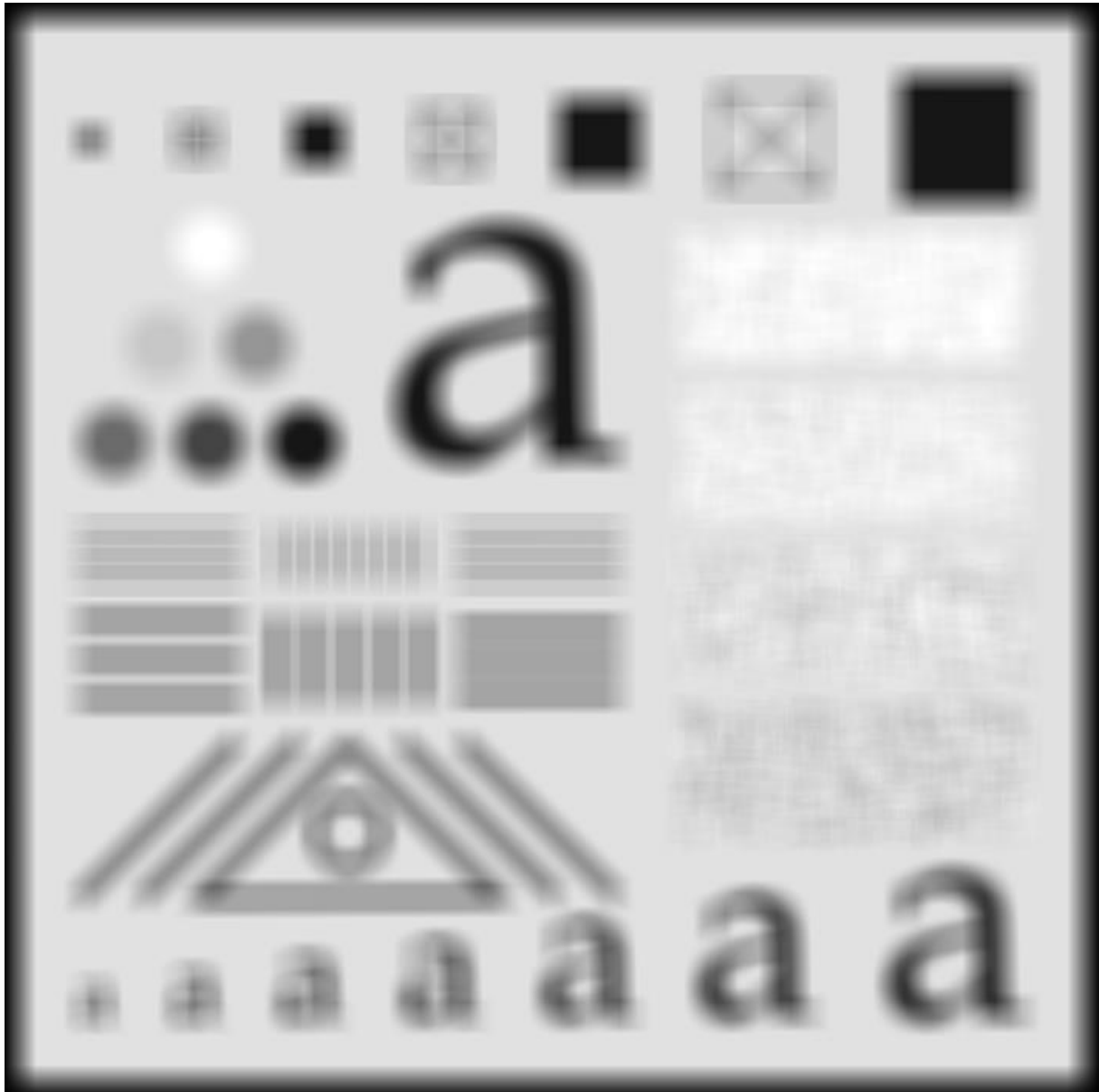
Version 2:

1) Testing different box filters

1) Image1:



2) Image2:



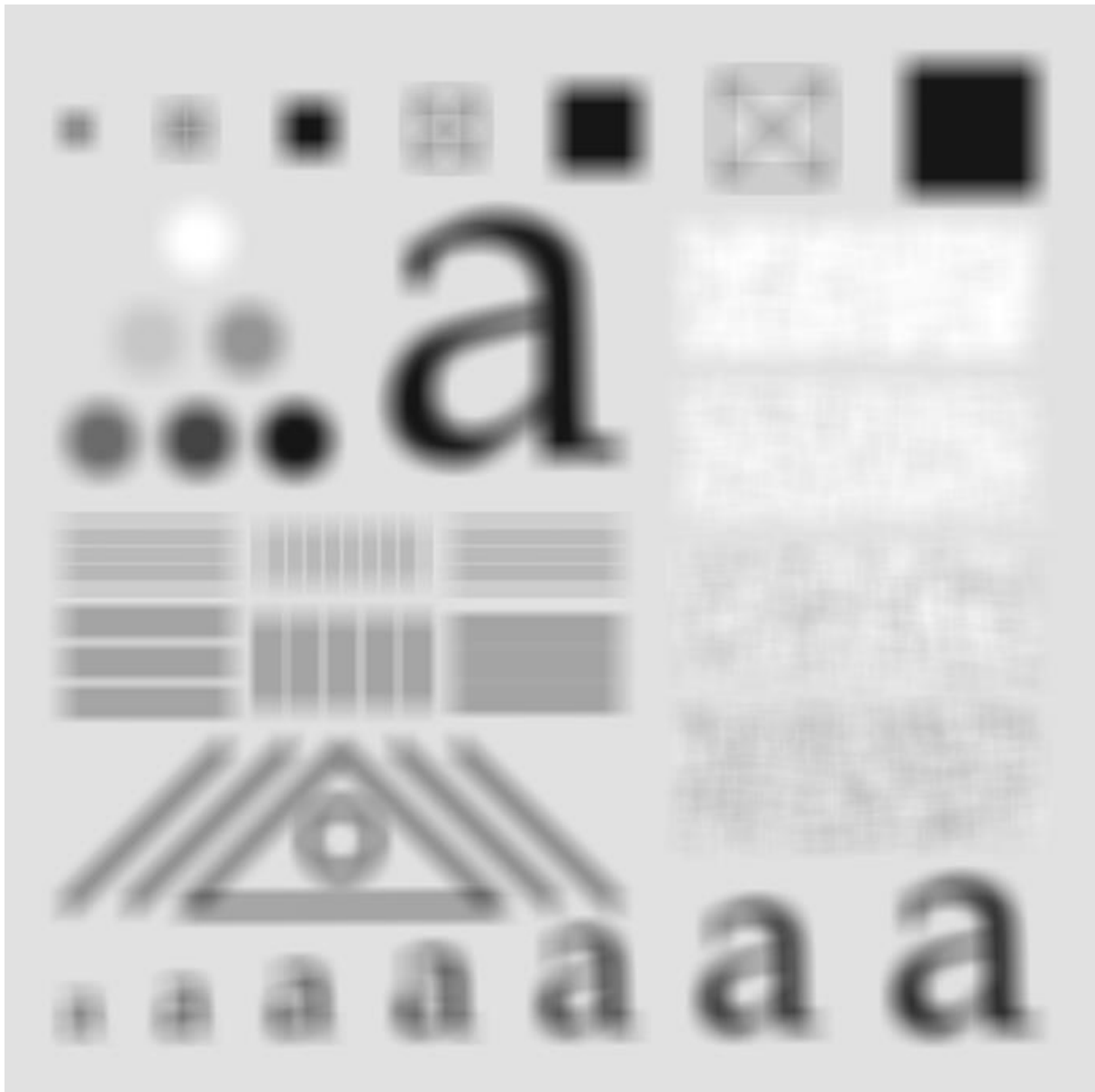
3) Does the 21×21 box filter have a lower or higher cutoff frequency than the 9×9 box filter? Explain why!

Lower, since it removes more information from the image.

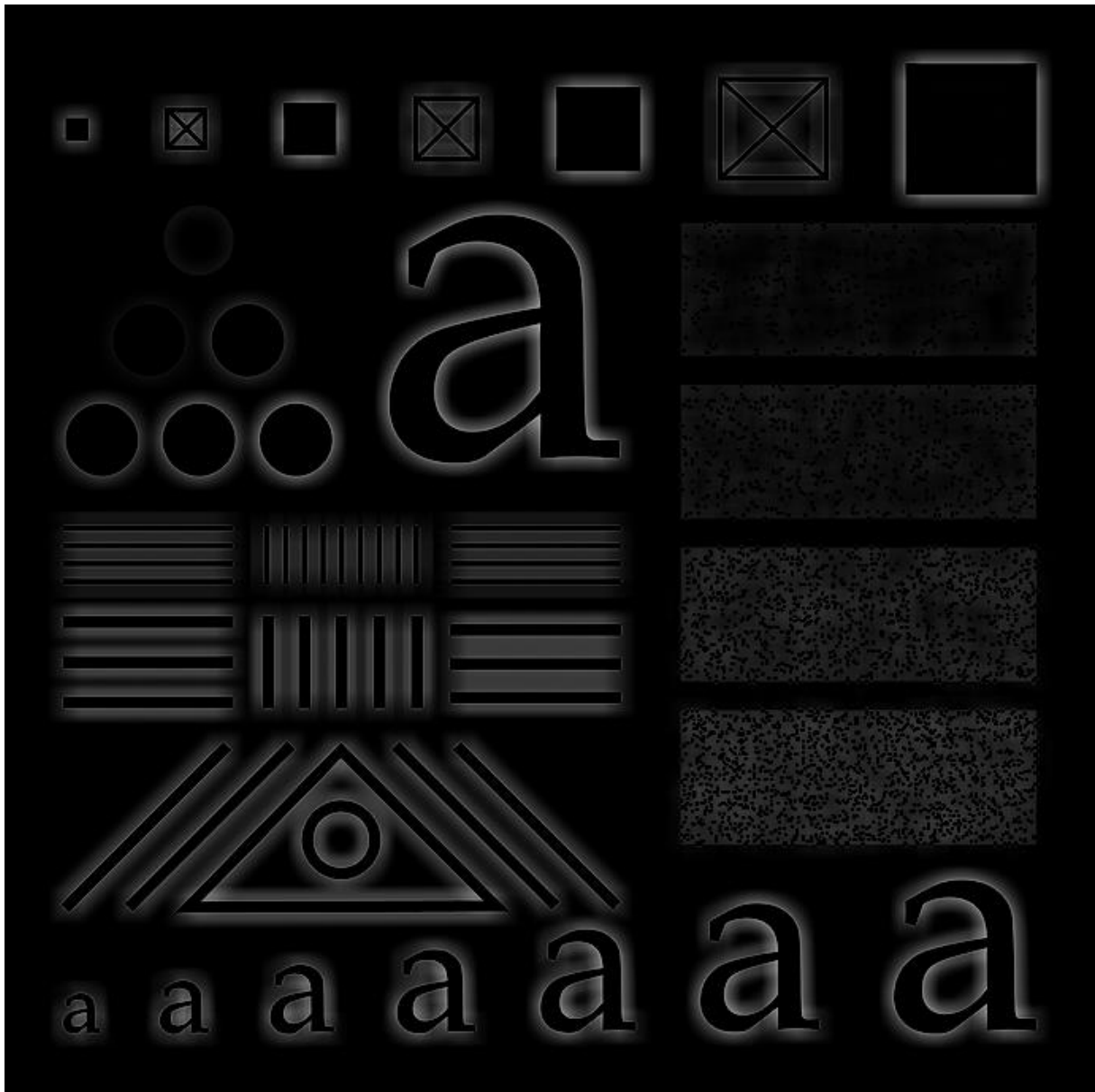
4) What is the reason for these dark borders in Image2?

Zero padding in the original image when filtering

5) Image3:



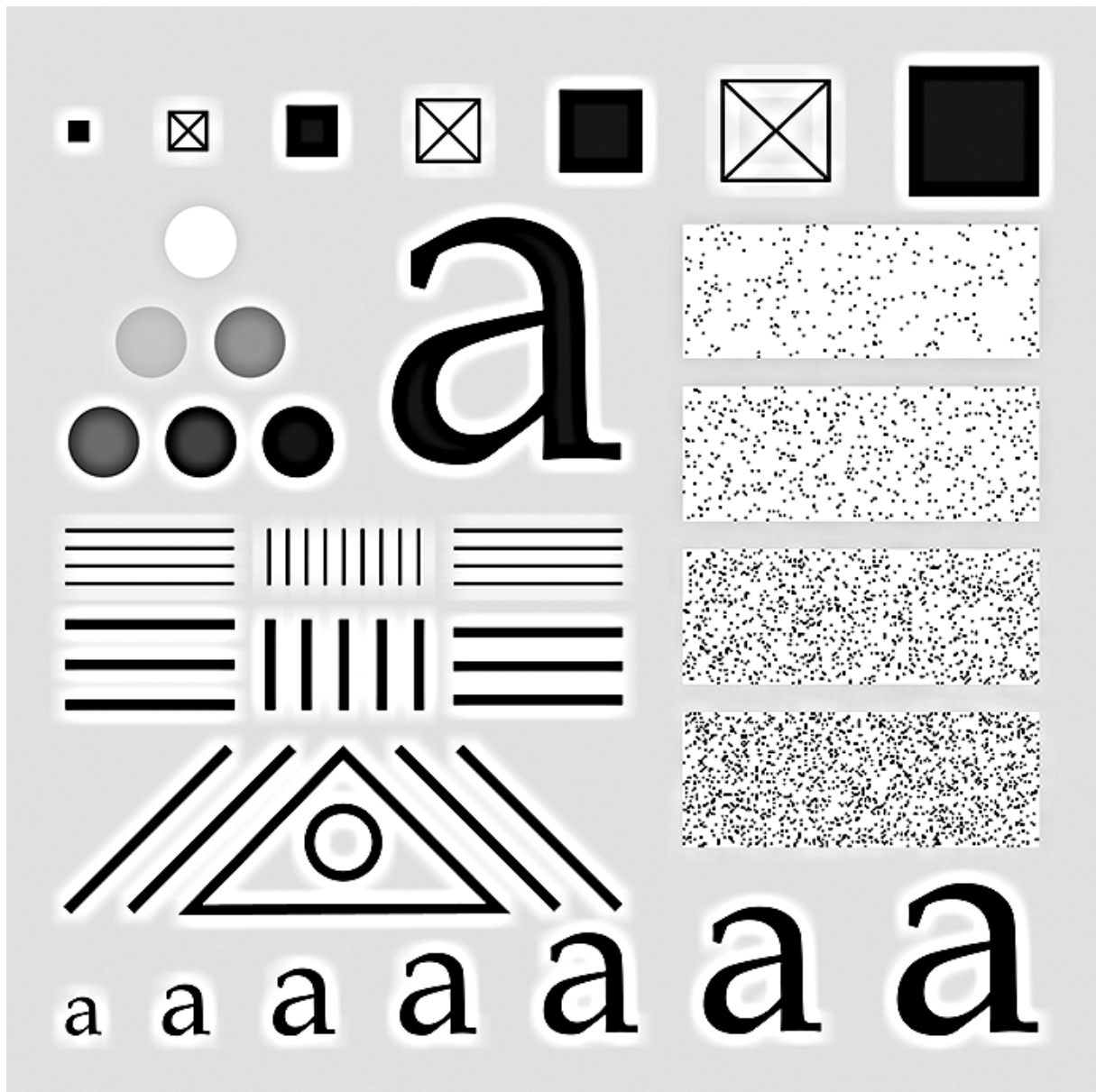
6) Image4:



7) Why is *Image4* so dark? What is the average value of the pixel values in *Image4*? And why?

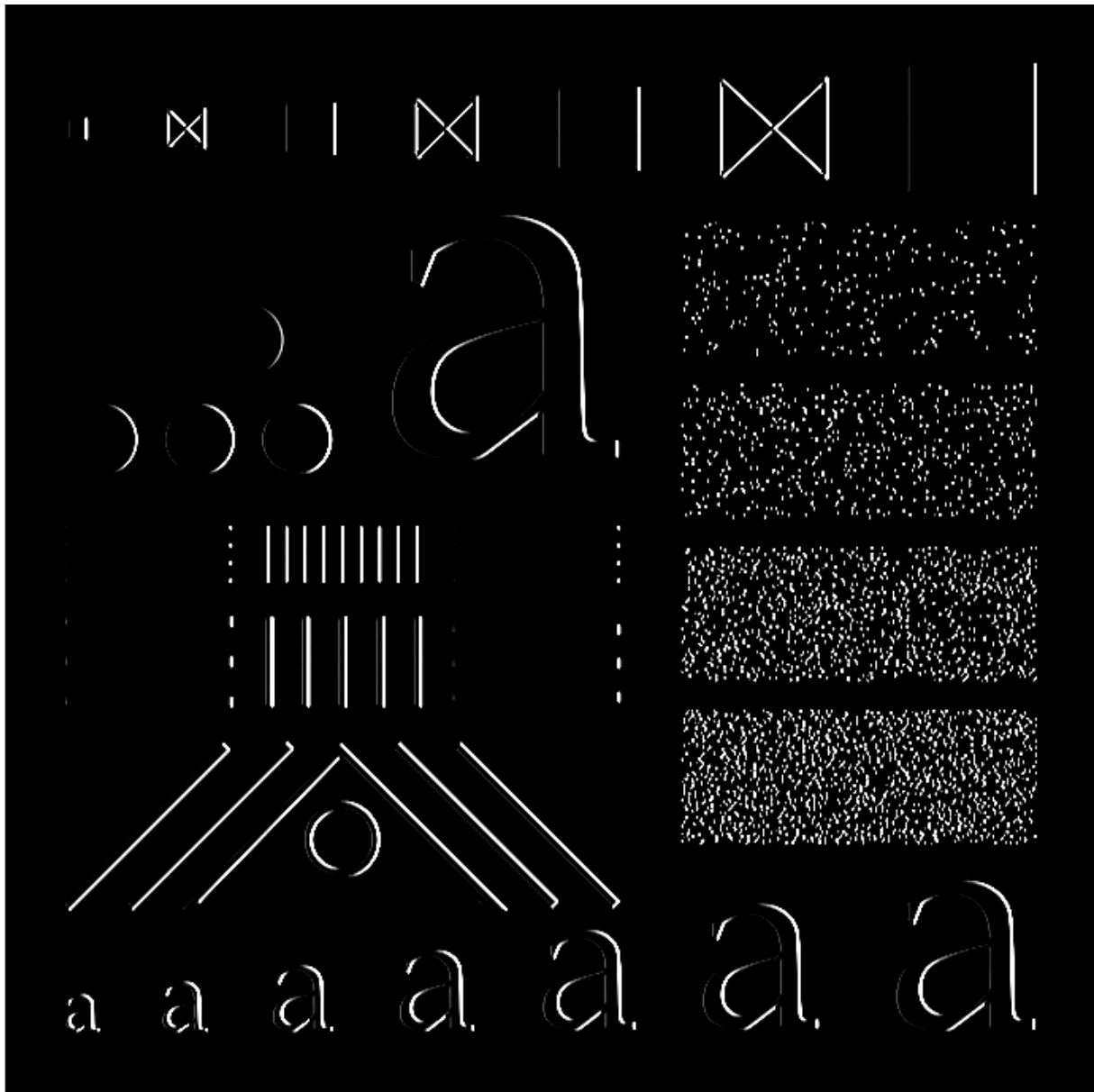
When creating a highpass filter a lot of the image values are below 0 = black

8) Image5:

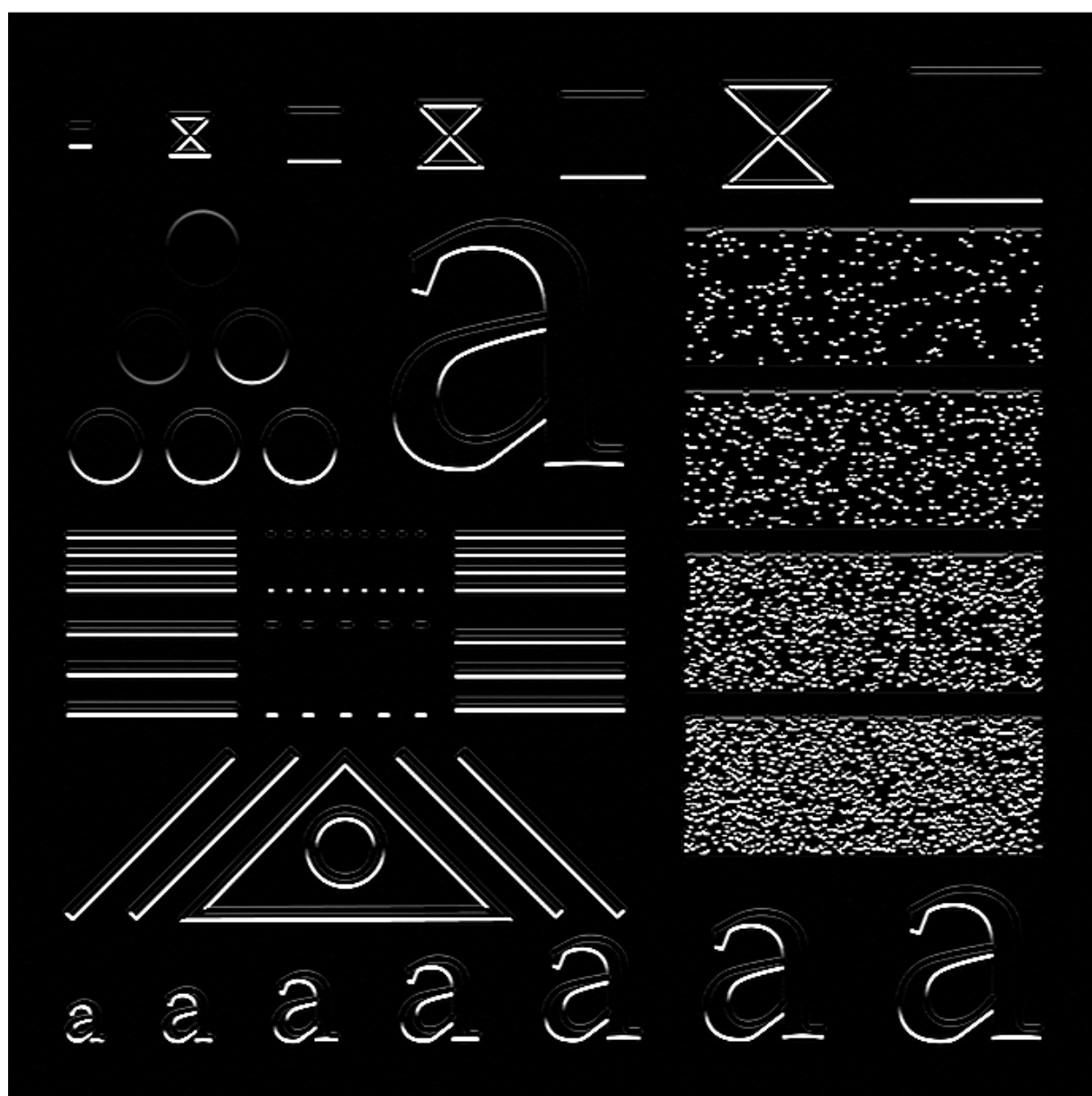


2) Testing Sobel filter kernels and gradient

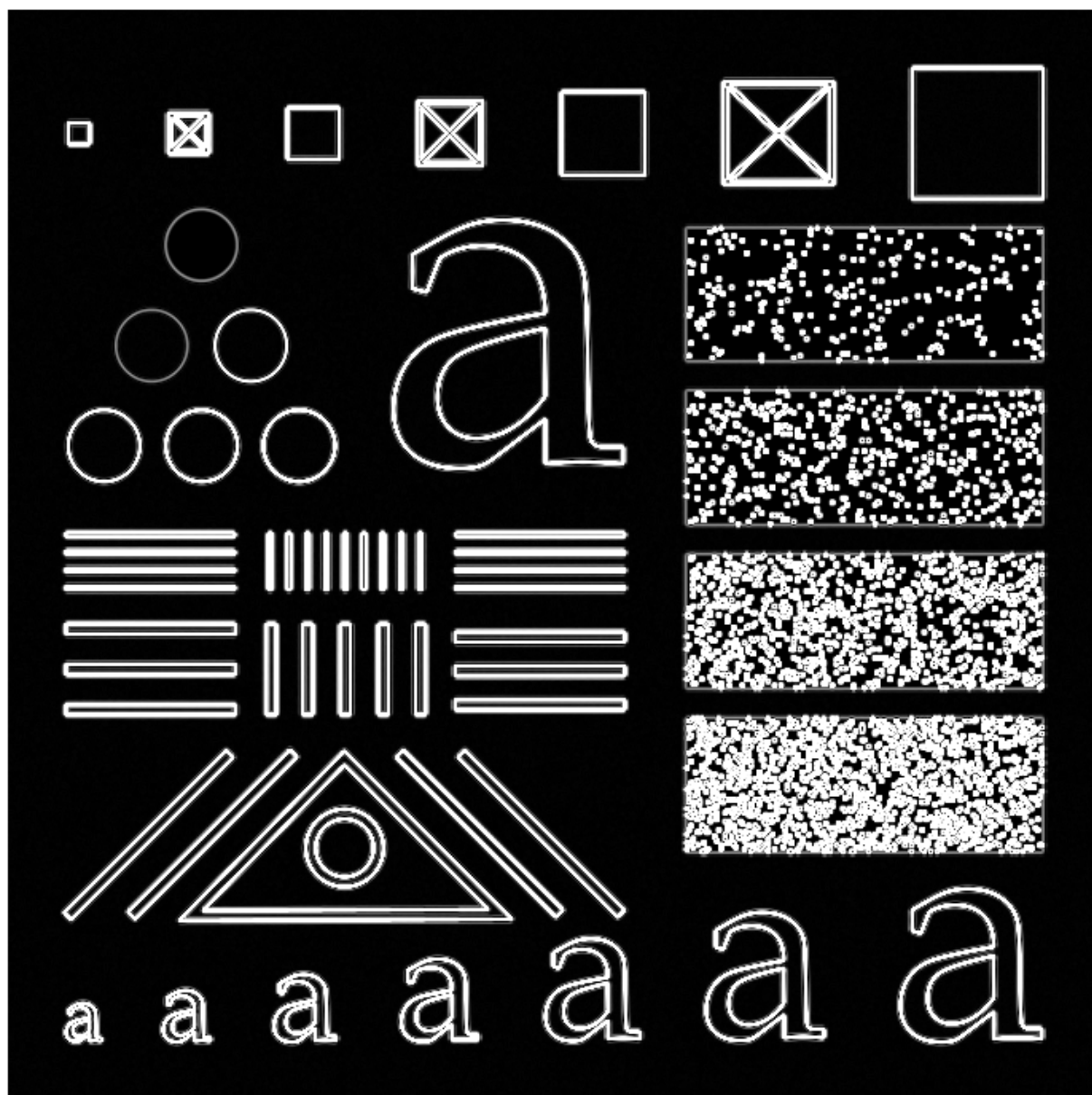
9) Image6:



10) Image7:



11) Image8:



*Don't forget to save the document as **.pdf** before submitting!*