1. Write a java method to compute the negative of an image. Assume the intensities are in the 0-255 range. The first line of your method may look like this:

   public static float[][] negative(float[][] Im){

2. Write a java method to perform clamping, as described in the textbook. Assume intensities are in the 0-255 range. The first line of your method may look like this:

   public static float[][] clamp(float[][] Im, float I_min, float I_max){

3. Write a java method to adjust the intensity of an image using a piece-wise linear function for intensity mapping. Given arrays I_in and I_out, if an input pixel has intensity of I_in[i] the intensity in the corresponding output pixel should be I_out [i] (see figure 1.4 for examples of intensity mapping functions). Assume I_in is sorted and I_in[0] = 0 and I_in[I_in.length-1] = 255. For example, if I_in = [0,255] and I_out = [255,0] your method should return the negative of the image.

   public static float[][] imAdjust(float[][] I, float[] I_in, float[] I_out){

4. Write a method to perform histogram equalization using the method from your previous question. Assume a sorting routine is available.

5. Write a java method to convolve an image and a mask. The first line of your method may look like this:

   public static float[][] convolve(float[][] I, float[][] M){

6. Write a java method to compute the intensity gradient magnitude and direction of an image.