Problem 1

Part A: *Decomposing a colored image into primary channels and generating grayscale image*

a) Look up the description of `PImage, createImage, loadImage, image(), save(), red(), green(), blue(), pixels[], loadPixels, updatePixels`
   Briefly, state what each command does.

b) Save the file "baboon.jpg" to the folder where you will write processing code. Write a program that
   - loads the image in this file,
   - processes the pixels one by one in this image and generates the red channel image, the green channel image, the blue channel image, and finally the grayscale channel image (use the equation we studied in class); note that the red channel image for example must look red in general and similarly the green and the blue channel images.
   - displays the original and the three channels in a 2x2 grid,
   - and finally saves these images to files named: redBaboon.jpg, greenBaboon.jpg,blueBaboon.jpg, and greyBaboun.jpg.

Part B: *Generating one primary channel from the grayscale image and two other channels, and finally generating the colored image*

Save the files "redBirds.jpg", "blueBirds.jpg", and "greyBirds.jpg" to the folder where you will write processing code. Write a program that
   - loads the images from these files,
   - processes the pixels one by one in these images to generate the green channel image. Also, make sure you get the full colored image. Explain in your report how you do that.
   - displays the three channels, the grayscale image and the colored image,
   - and finally saves the generated images to files named: greenBirds.jpg, and coloredBirds.jpg.

Problem 2

Part A:
Open the image in file "grid.jpg". Look at it for few seconds.
   a) What do you see?
   b) Is perceived lightness the same as intensity?
   c) Explain your perception using theories about the human visual system.

Part B:
Stare at the cross in the following image for approximately 30 seconds, and close your eyes and look at a bright surface such as the wall.

   a) What do you see?
   b) How would you explain your perception based on the human visual system's behavior?