Instructions:
There are three problems in this assignment. For each problem, you may assume that both the function's input and output are a $n \times m \times 3$ Numpy array. Name your script `hw6.py` and submit it on CCLE. Add comments to each function.

Problem 1:
Write a function `heart(im)` that takes an image `im` as input, and outputs a heart-shaped cut-out of it on a pink background. The shape of the heart will need to depend on the dimensions of the image, so that you do not cut too much of the image.

Figure 1: (Left) Original figure; (Right) Figure with a heart-shaped mask.

Problem 2:
Write a function `blurring(im, method)` that takes a gray-scale picture, and offers two options for noise removal: uniform or Gaussian.

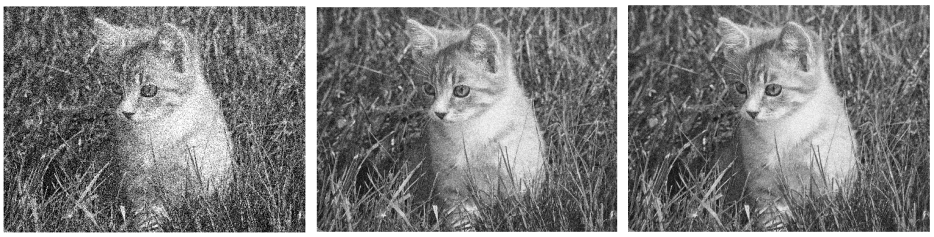

Figure 2: (Left) Grey-scale figure with Gaussian noise; (Center) After Gaussian noise removal; (Right) After uniform noise removal

Problem 3:
Write a function `detect_edge(im, method)` that takes a gray-scale image and detects edges, with the option of horizontal, vertical or both.

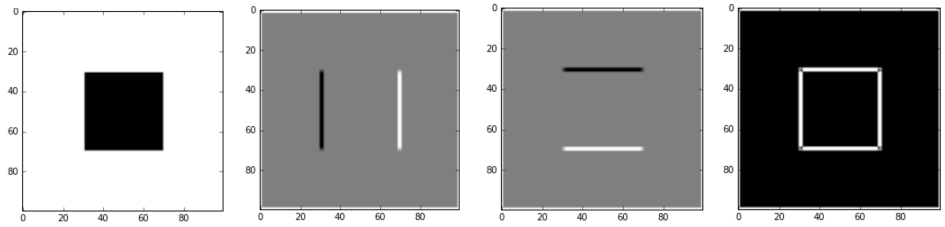

Figure 3: (From left) original figure; edge detection in vertical, horizontal, or both directions.