Part 1.

1. The process of Marr-Hildreth Detector (LoG) is:

(1) Smooth the image by applying a Gaussian filter on the image, parametrized by the window size n. Since 2nd order derivatives are quite sensitive to noise.

(2) Use 2nd order derivative to detect the edges. So calculate the Laplacian of the output Gaussian from step 1.

The output would be:

(3) Since the Laplacian output (2nd order derivative) generates negative signs of the neighbors for every edge, so we need to find the zero crossing in the output from step 2 to locate every edge.

The size of the Gaussian window n is typically chosen as an odd number that is >= 6 \* σ.

The process of a Canny Edge Detector is:

(1)