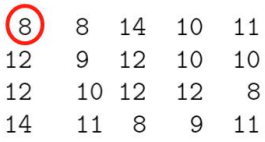
Written Part:

①:

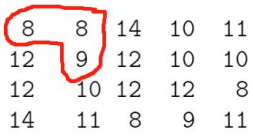


I = 8 , μ = 8, σ^2 = 0 , H(R) = True

②:

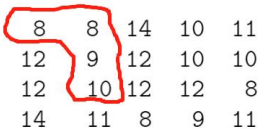
I = 8, 8; μ = 8; σ^2 = 0 , H(R) = True

③:



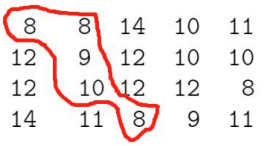
I = 8 ,8 ,9; μ = 8.33; σ^2 = 0.222 , H(R) = True

④:



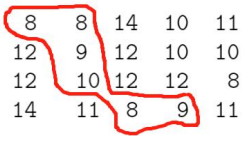
I = 8,8,9,10; μ =8.75; σ^2 = 0.6875 , H(R) = True

⑤:



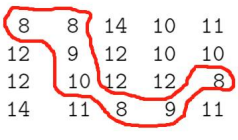
I = 8,8,9,10,8; μ =8.6; σ^2 = 0.64 , H(R) = True

⑥:



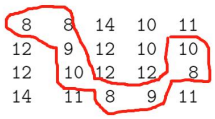
I =8,8,9,10,8,9; μ =8.67; σ^2 = 0.56 , H(R) = True

⑦:



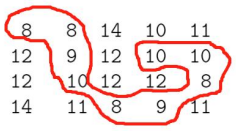
I = 8,8,9,10,8,9; μ =8.57; σ^2 = 0.53 , H(R) = True

⑧:



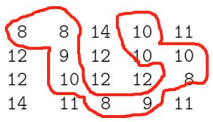
I = 8,8,9,10,8,9,10; μ =8.75; σ^2 = 0.69 , H(R) = True

⑨:



I = 8,8,9,10,8,9,10,10; μ =8.89; σ^2 = 0.77 , H(R) = True

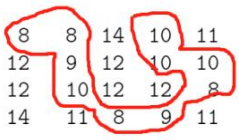
⑩:



I = 8,8,9,10,8,9,10,10,10; μ =9; σ^2 = 0.8 , H(R) = True

So the rest has H(R) = FALSE;

So the first region that will be generated is the number 10:



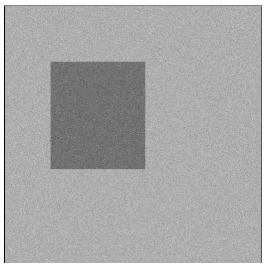
The mean is : 9

The sample Variance: σ^2 = 0.8

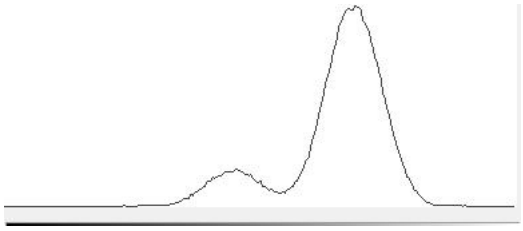
Computer Program Part:

For the image1.raw:

Gray level image:



Histogram image:



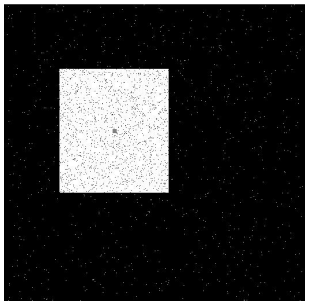
Threshold:100

Area: 39605

X: 186

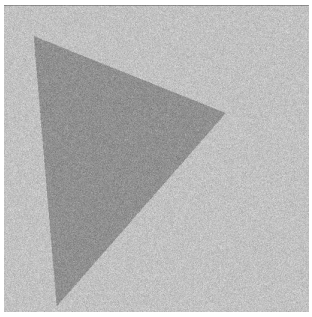
Y: 218

Binary Image:

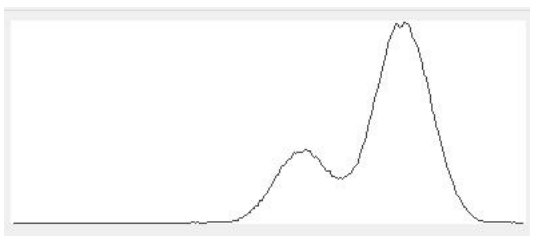


For the image2.raw:

Gray level image:



Histogram image:



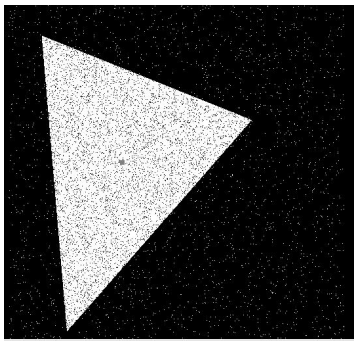
Threshold:100

Area: 65843

X: 173

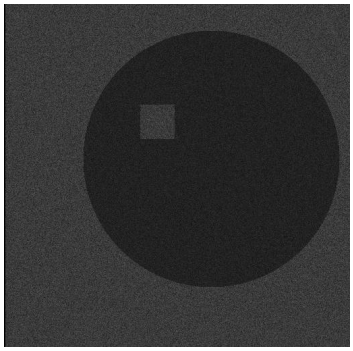
Y: 243

Binary Image:

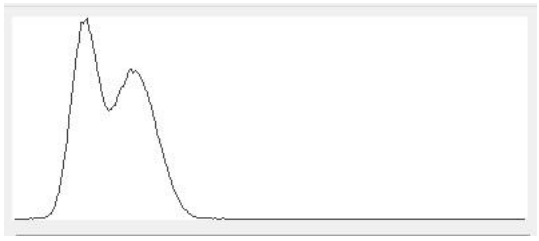


For the image3.raw:

Gray level image:



Histogram image:



Threshold:100

Area: 125550

X: 294

Y: 236

Binary Image: