Exercise Sheet 3

Probability Density Estimation

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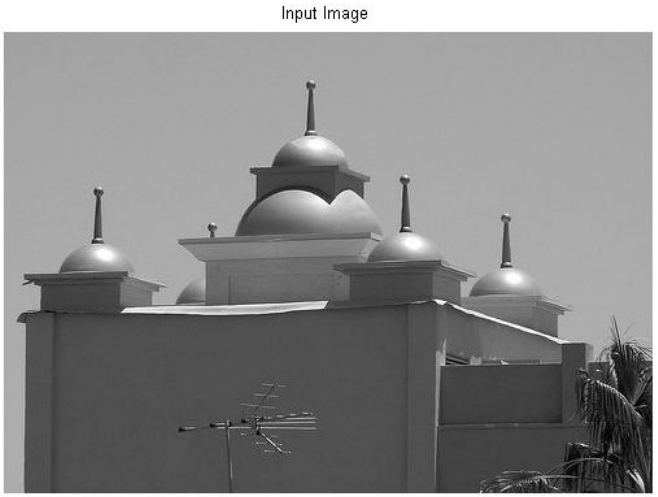
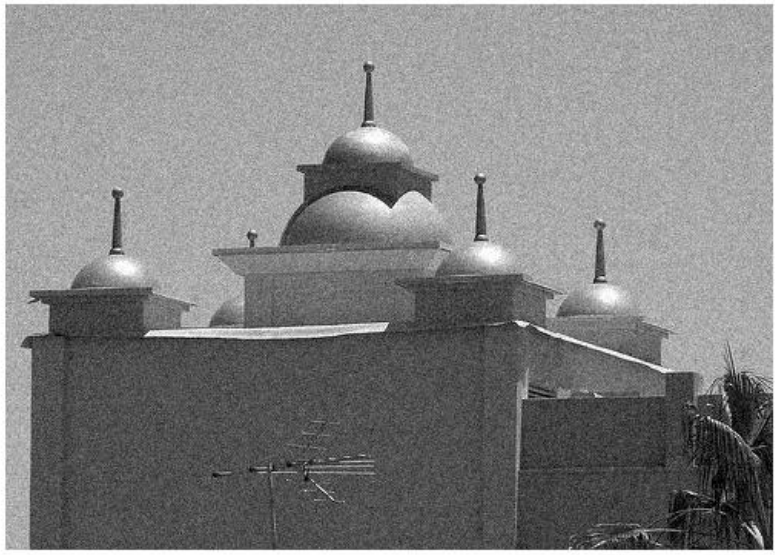
Problem 3.1 Data

Problem 3.1 Data

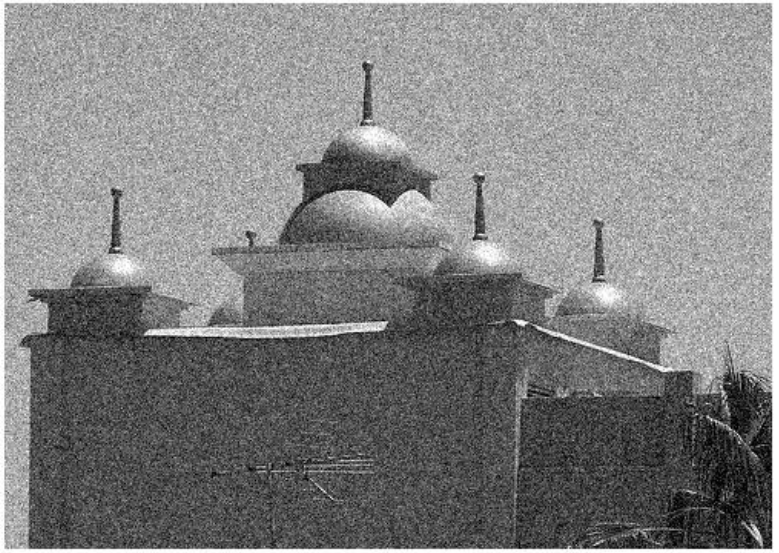
Input Image:



σ = 0.05



σ = 0.1



Problem 3.2 Kernel Density Estimation

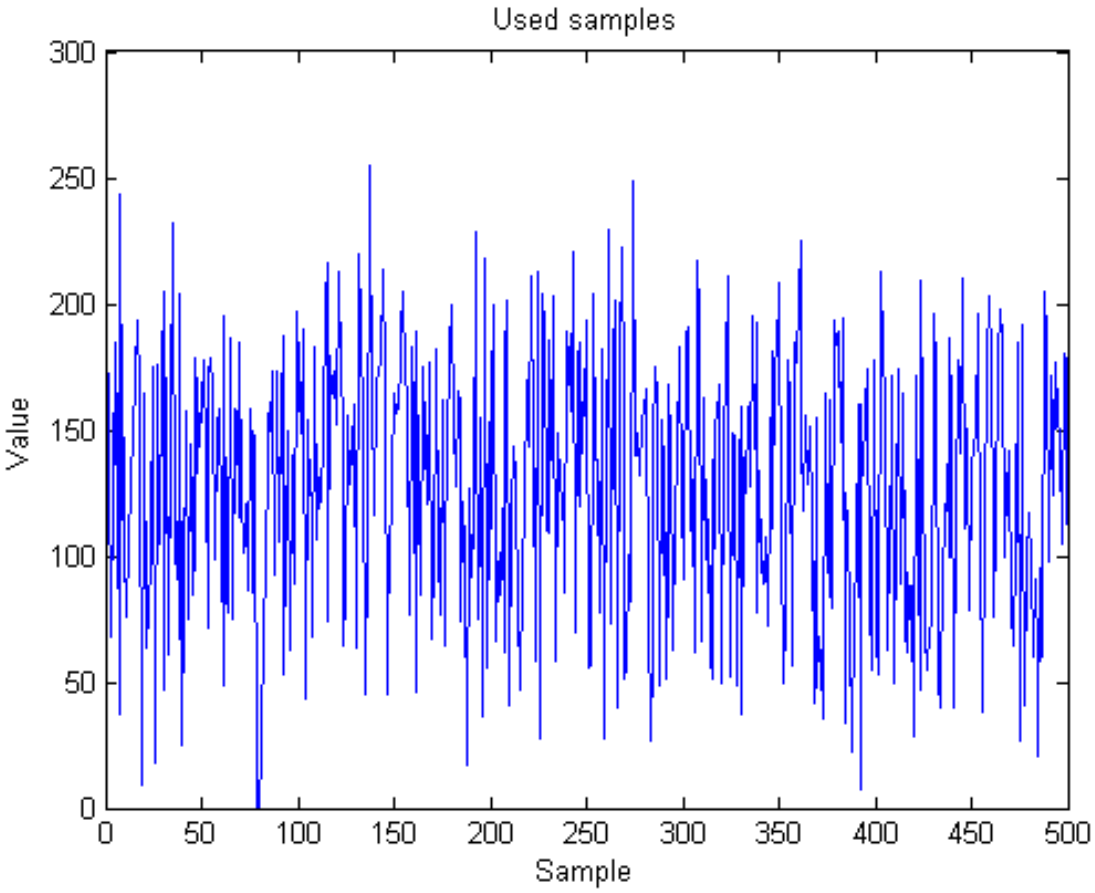
Problem 3.2 Kernel Density Estimation

Values:

σ = 0.1

P = 500

Used Samples:



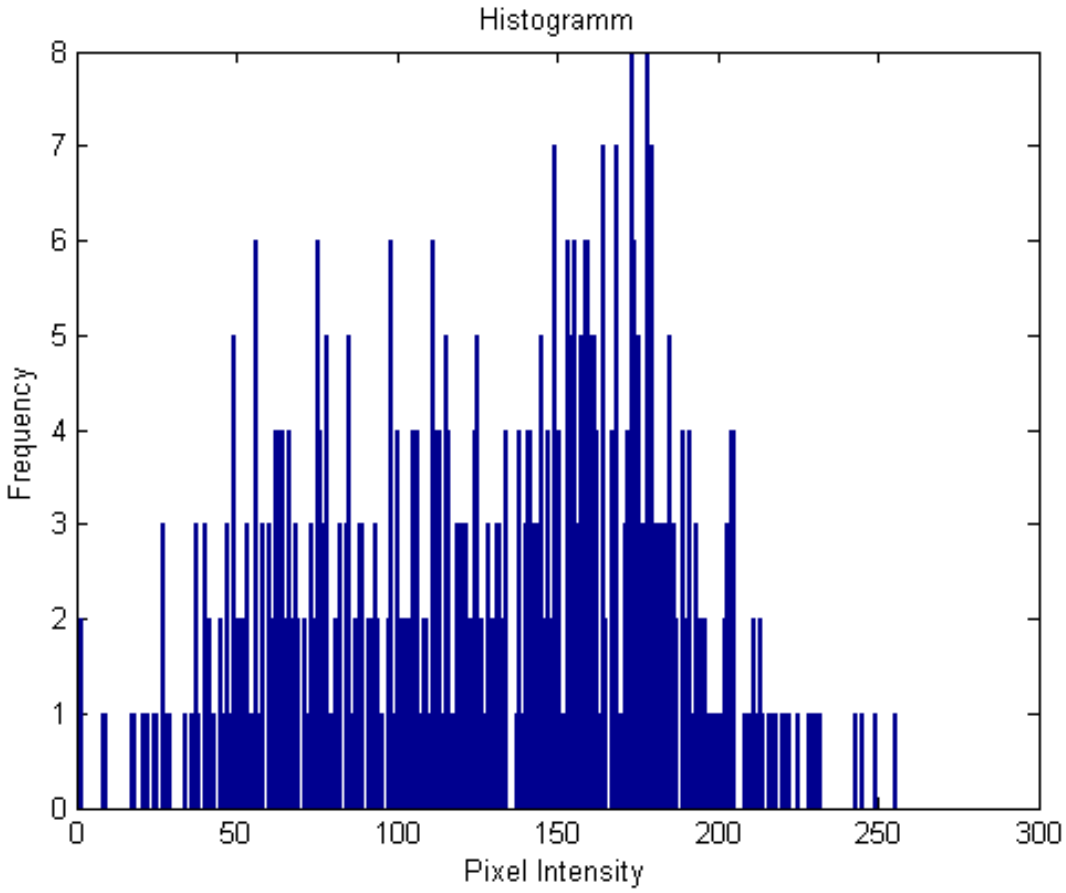
Problem 3.2 Kernel Density Estimation

Values:

σ = 0.1

P = 500

Histogramm version:



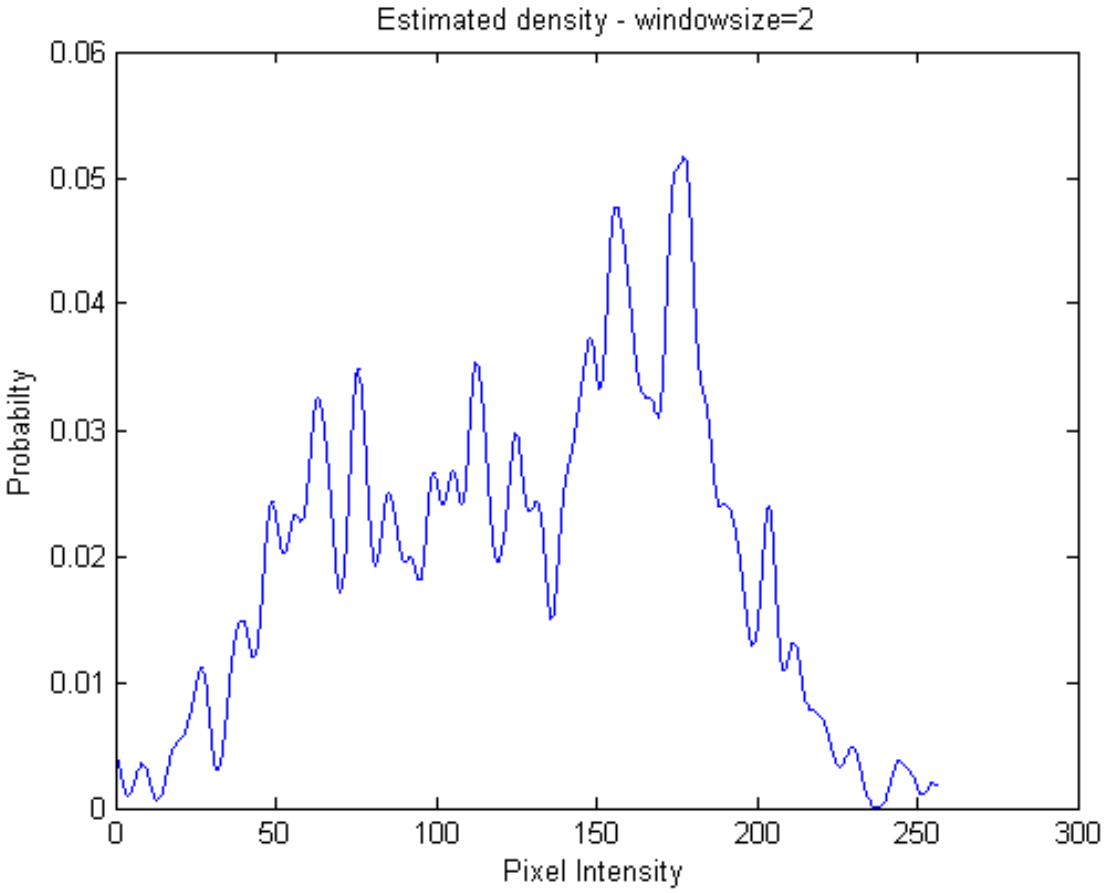
Problem 3.2 Kernel Density Estimation

Values:

σ = 0.1

P = 500

Gaussian kernel version: (h = 2)



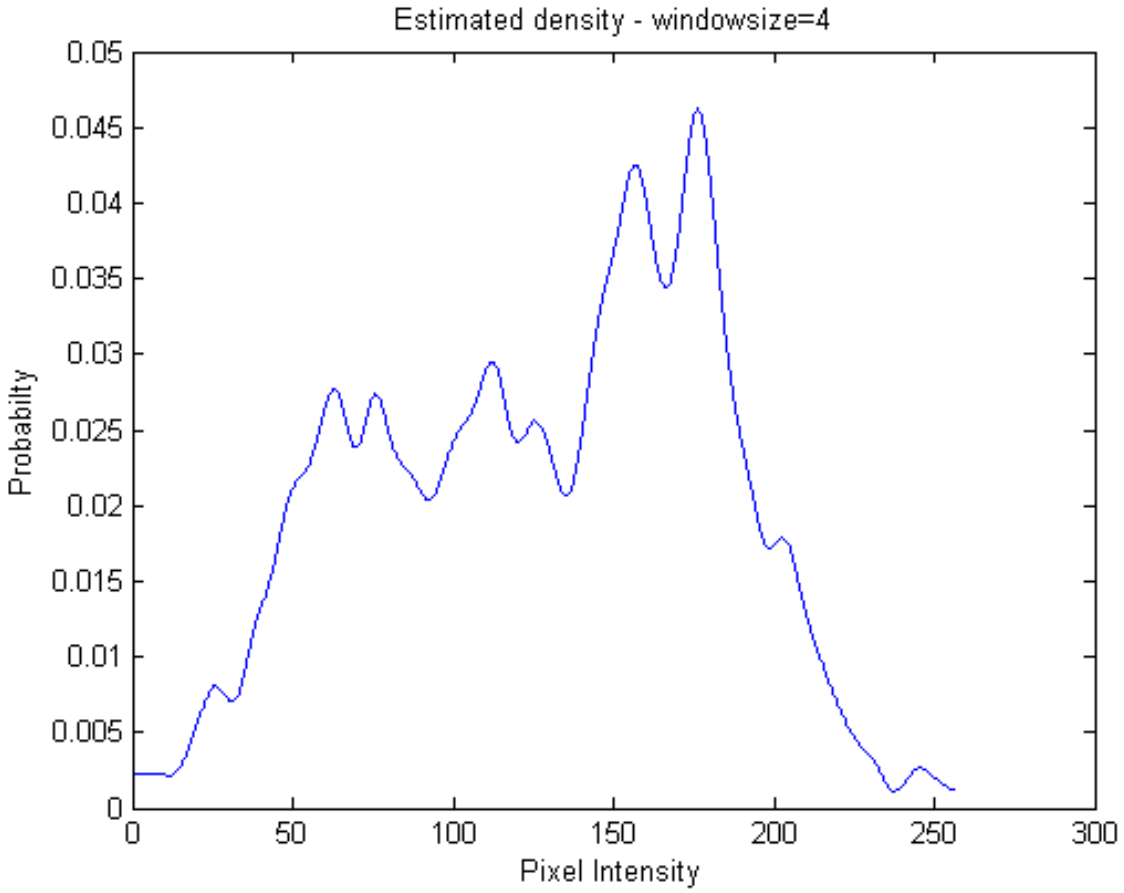
Problem 3.2 Kernel Density Estimation

Values:

σ = 0.1

P = 500

Gaussian kernel version: (h = 4)



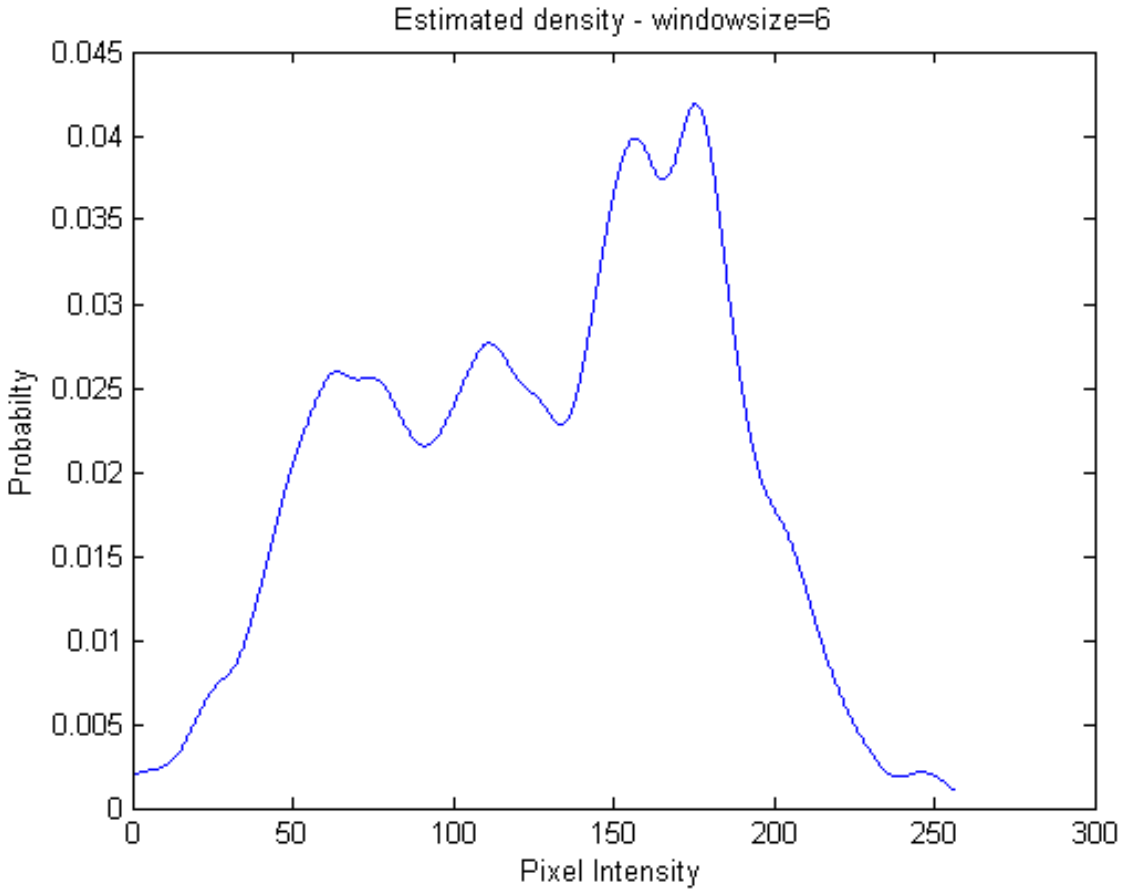
Problem 3.2 Kernel Density Estimation

Values:

σ = 0.1

P = 500

Gaussian kernel version: (h = 6)



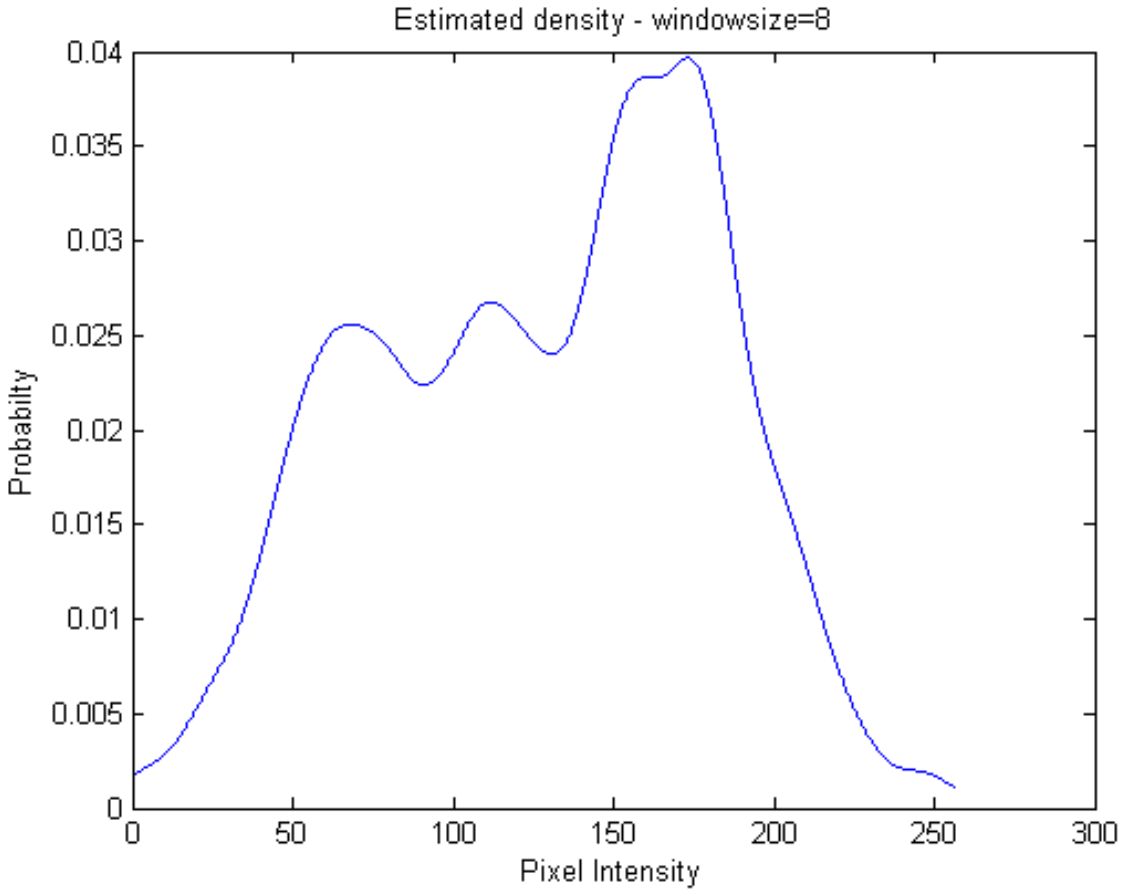
Problem 3.2 Kernel Density Estimation

Values:

σ = 0.1

P = 500

Gaussian kernel version: (h = 8)



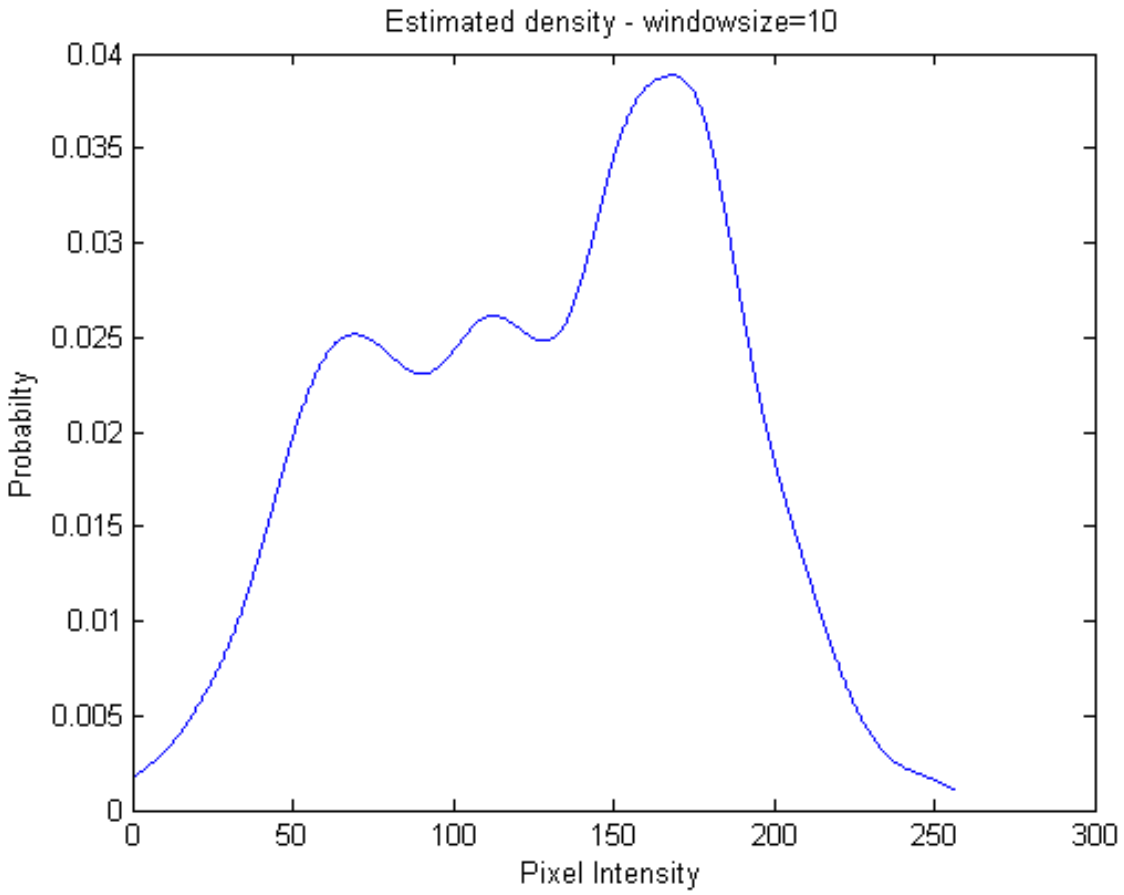
Problem 3.2 Kernel Density Estimation

Values:

σ = 0.1

P = 500

Gaussian kernel version: (h = 10)



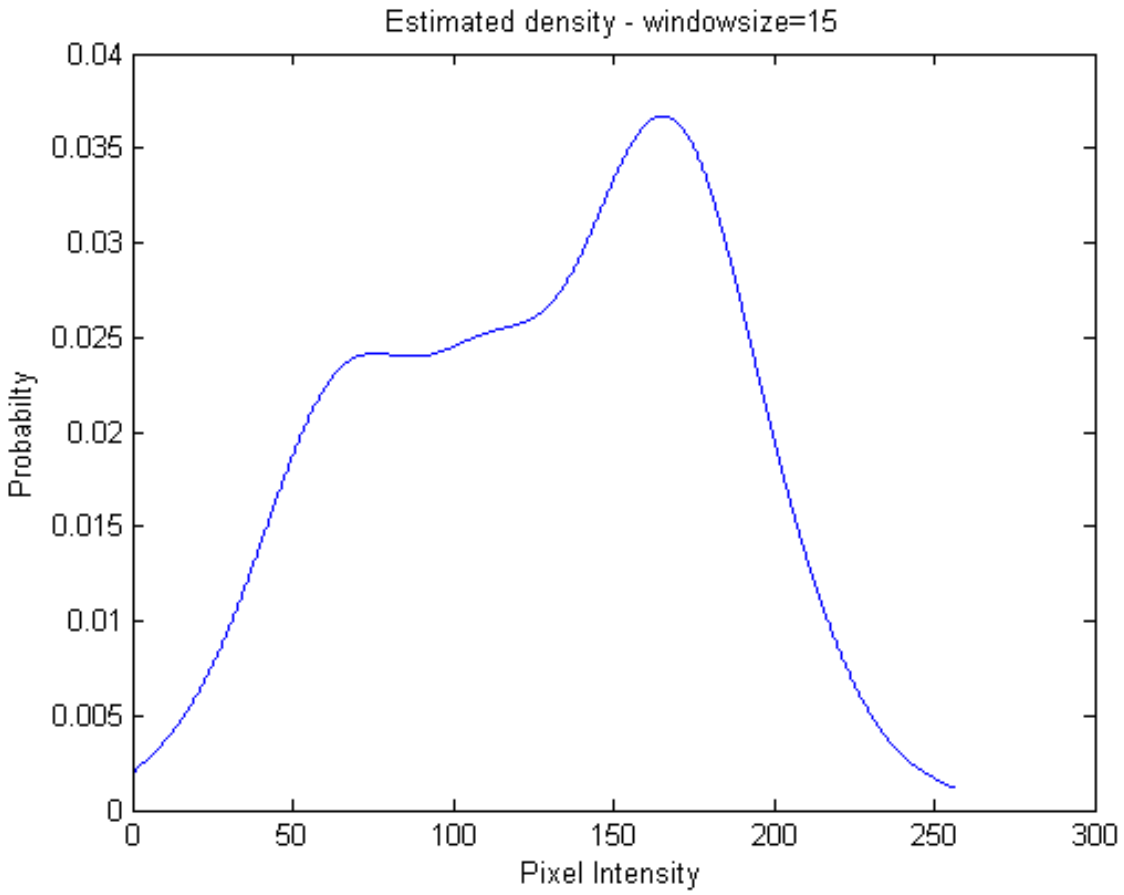
Problem 3.2 Kernel Density Estimation

Values:

σ = 0.1

P = 500

Gaussian kernel version: (h = 15)



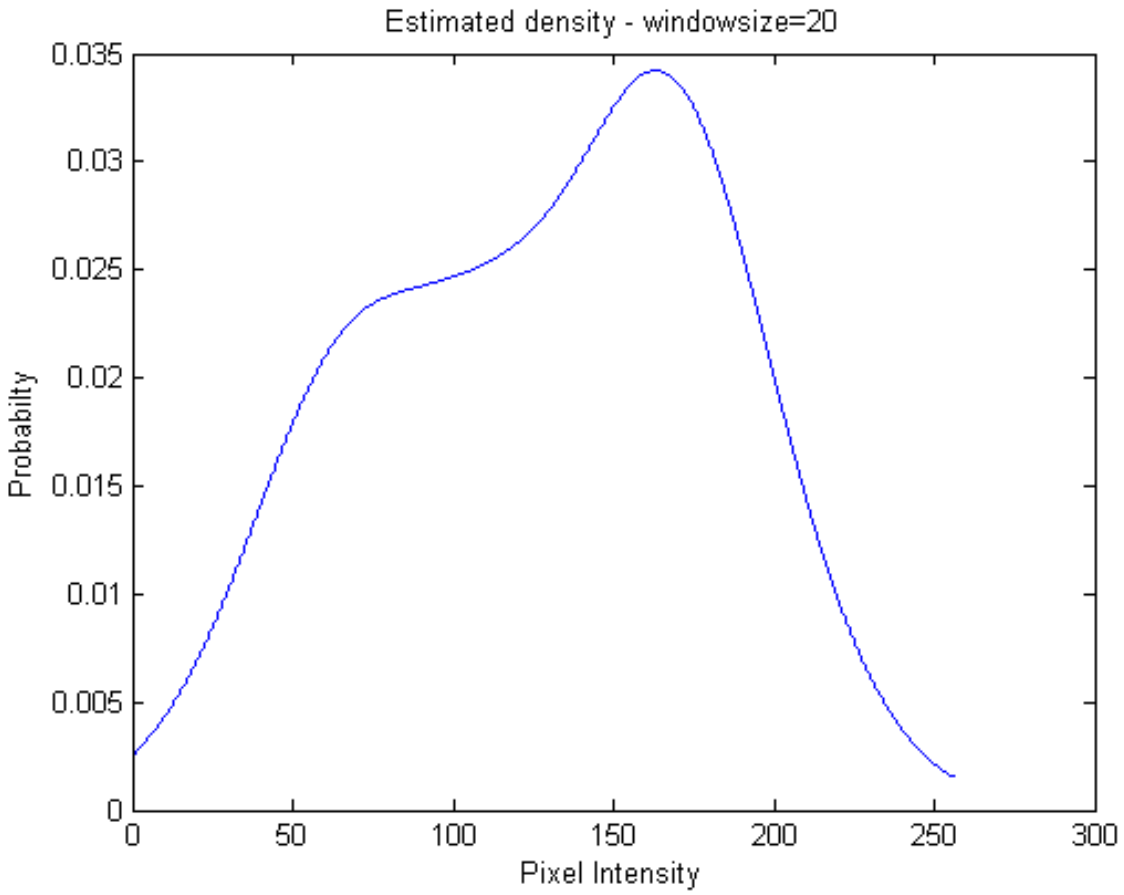
Problem 3.2 Kernel Density Estimation

Values:

σ = 0.1

P = 500

Gaussian kernel version: (h = 20)



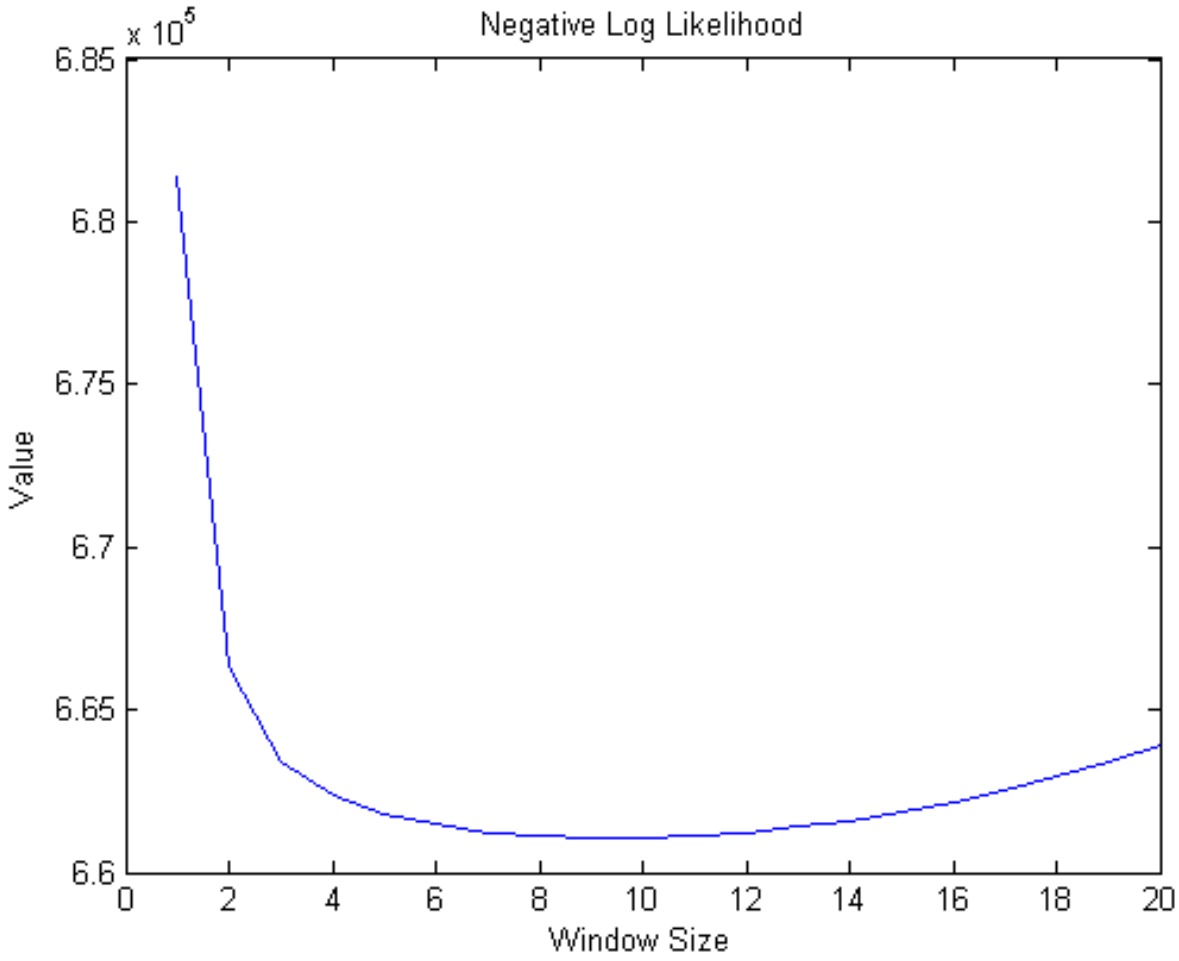
Problem 3.3 Validation

Problem 3.3 Validation

Values:

σ = 0.1

P = 500



Minumum at:

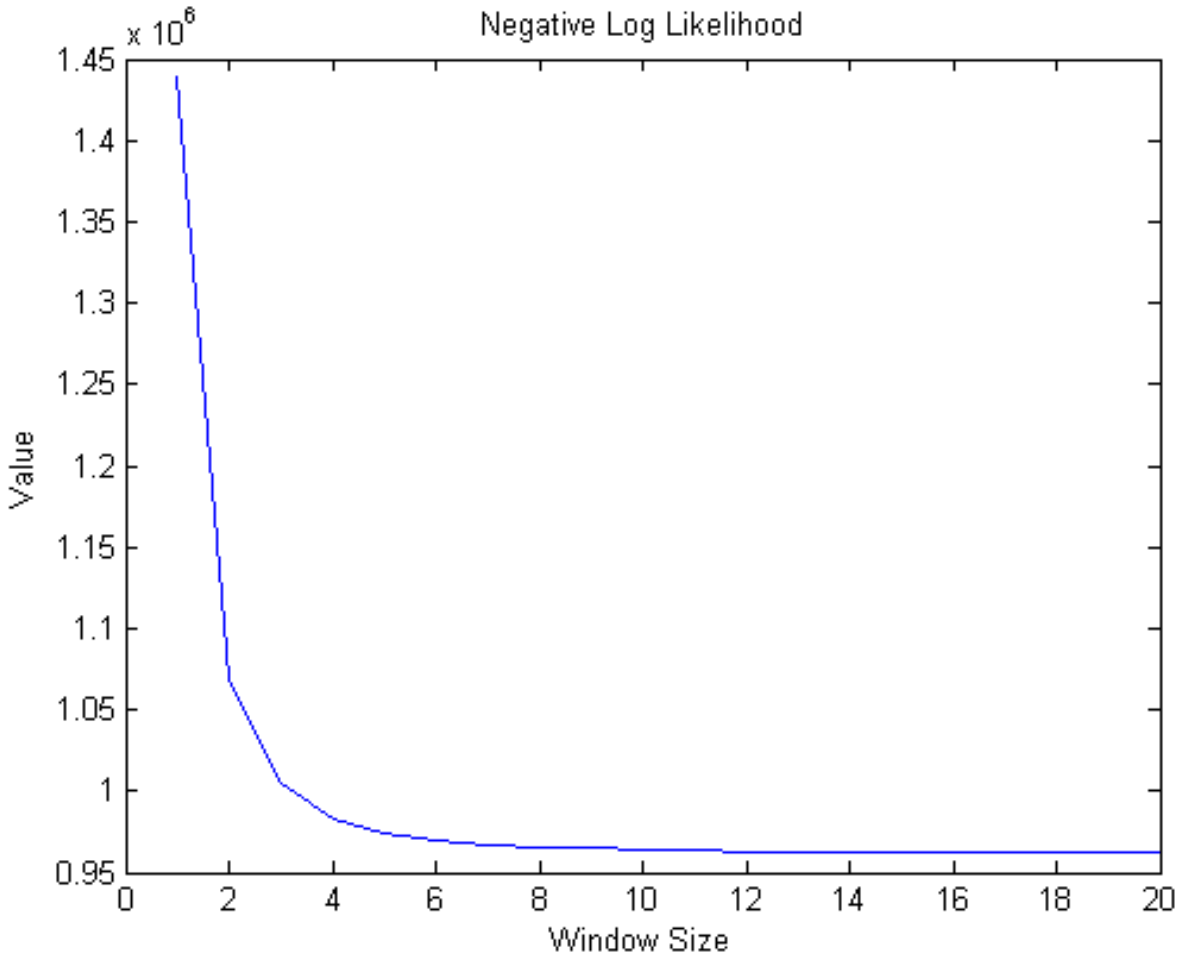
h = 9 … 12

Problem 3.3 Validation

Values:

σ = 0.1

P = 100



Minumum at:

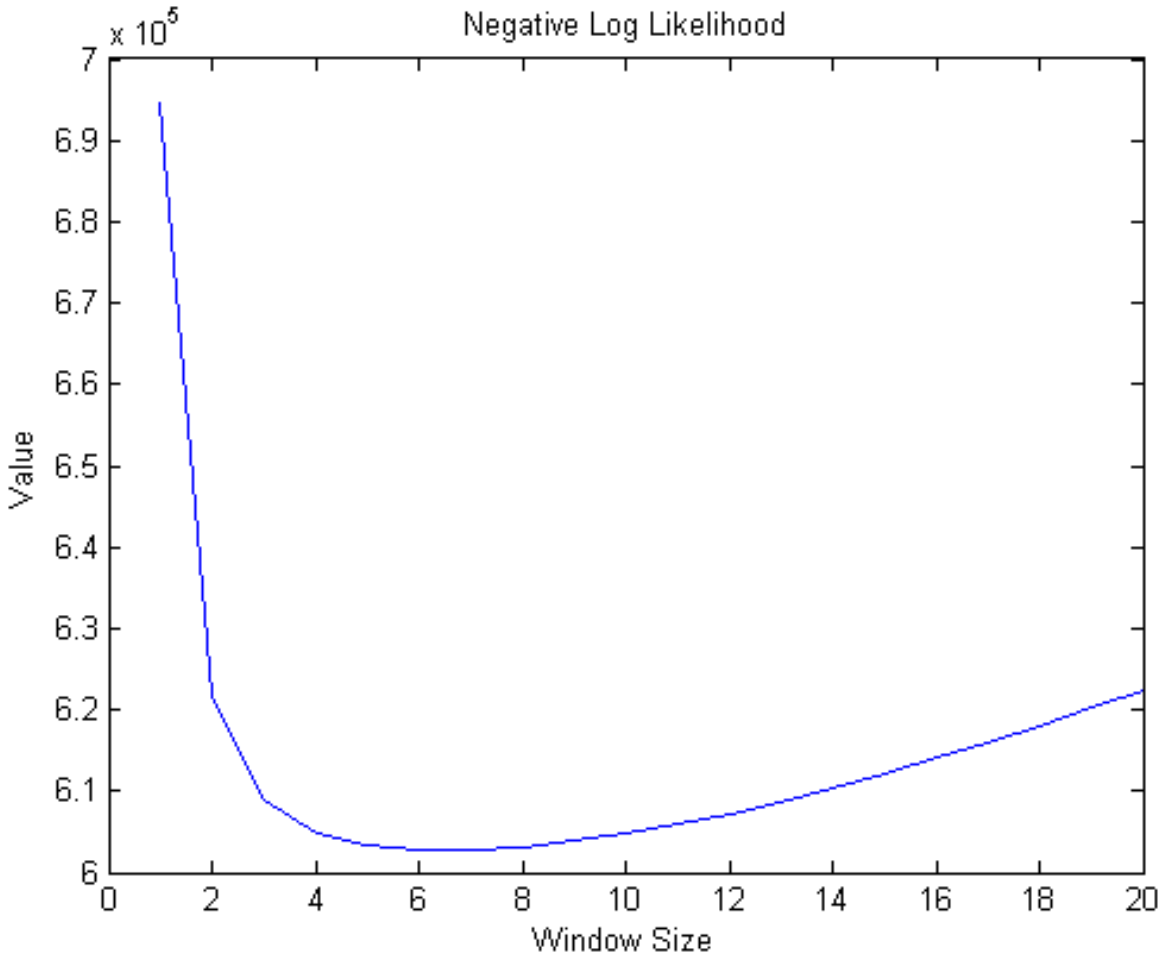
h = 17 … 19

Problem 3.3 Validation

Values:

σ = 0.05

P = 500



Minumum at:

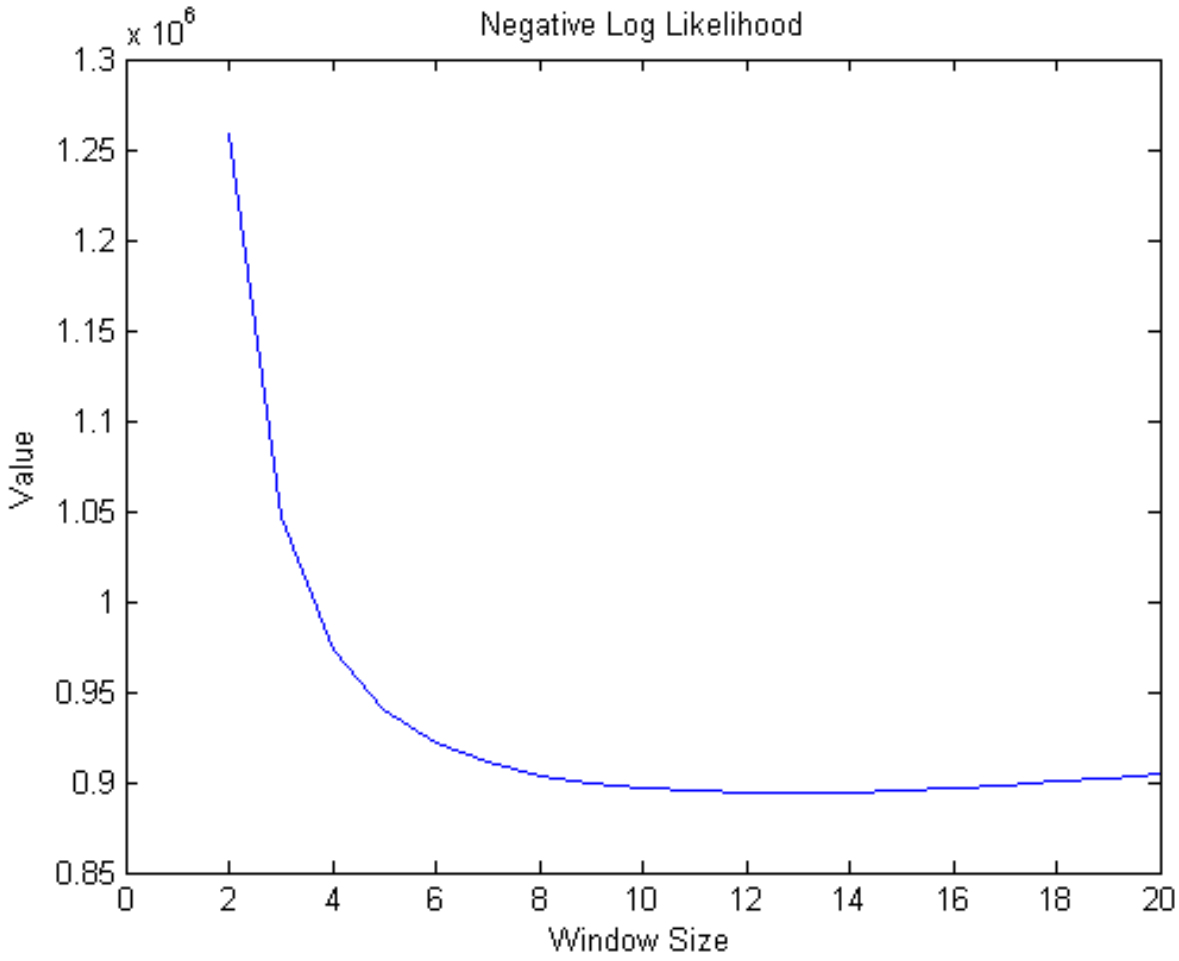
h = 6 … 8

Problem 3.3 Validation

Values:

σ = 0.05

P = 100



Minumum at:

h = 10 … 14