Pattern Classification Homework #6

1.

(a) j=1; p=1

Window width = 1, height=1

−7

j=4; p=1/2=height
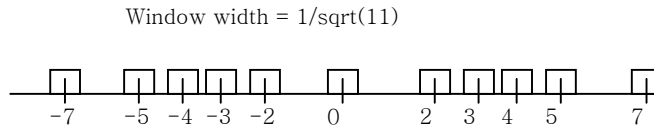
Window width = 1/2,

−7   −5 −4 −3

j=11; p=1/sqrt(11)=height

Window width = 1/sqrt(11)

−7   −5 −4 −3 −2   0   2   3   4   5   7
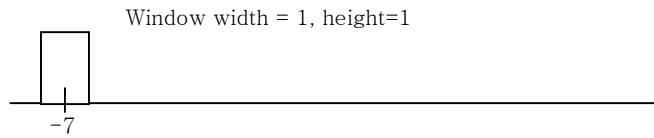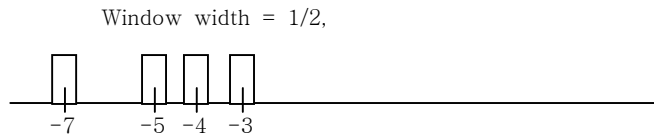
 (b) For $h_j=h/\sqrt{j}$, h can be used to adjust the amount of pulse overlap. Small h gives less overlap, hence the estimator has higher resolution, but also high variance. Larger h gives more overlap and a smoother p(x). The estimator will have reduced resolution and variance.

2.

Sol: x=2; p=1/20

x=4; p=1/16

x=6; p=1/8

x=10; p=1/9.6