Bookmarks

- Module 1: The Basics of R and Introduction to the Course
- Entrance Survey
- Module 2: Fundamentals of Probability, Random Variables, Distributions, and Joint Distributions
- Module 3: Gathering and Collecting Data, Ethics, and Kernel Density Estimates

Gathering and Collecting Data
Finger Exercises due Oct 17, 2016 05:00 IST

Kernel Density Estimation, Part II - Quiz

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Question 1

1 point possible (graded)

Let $K(x)$ be a non-negative, symmetric kernel weighting function, centered at zero and integrating to 1. Often, $K(x)$ is chosen to be standard normal density, and the kernel density estimator is given by:

$$\hat{f}_h(x) = \frac{1}{n}\sum_{i=1}^{n} K_h(x - x_i) = \frac{1}{nh}\sum_{i=1}^{n} K\left(\frac{x - x_i}{h}\right)$$

What is the distribution of $K_h(x - x_i)$?

- a. A standard normal distribution
- b. A normal distribution with mean h and standard deviation 1

Summarizing and Describing Data
Finger Exercises due Oct 17, 2016 05:00 IST

Module 3: Homework
Homework due Oct 10, 2016 05:00 IST

- Module 4: Joint, Marginal, and Conditional Distributions & Functions of Random Variable
- Module 5: Moments of a Random Variable, Applications to Auctions, & Intro to Regression
- Module 6: Special Distributions, the Sample Mean, the Central Limit Theorem, and Estimation

c. A normal distribution with mean 0 and standard deviation h

d. A normal distribution with mean 0 and standard devation nh

e. A normal distribution with mean equal to the sample mean and standard deviation h.

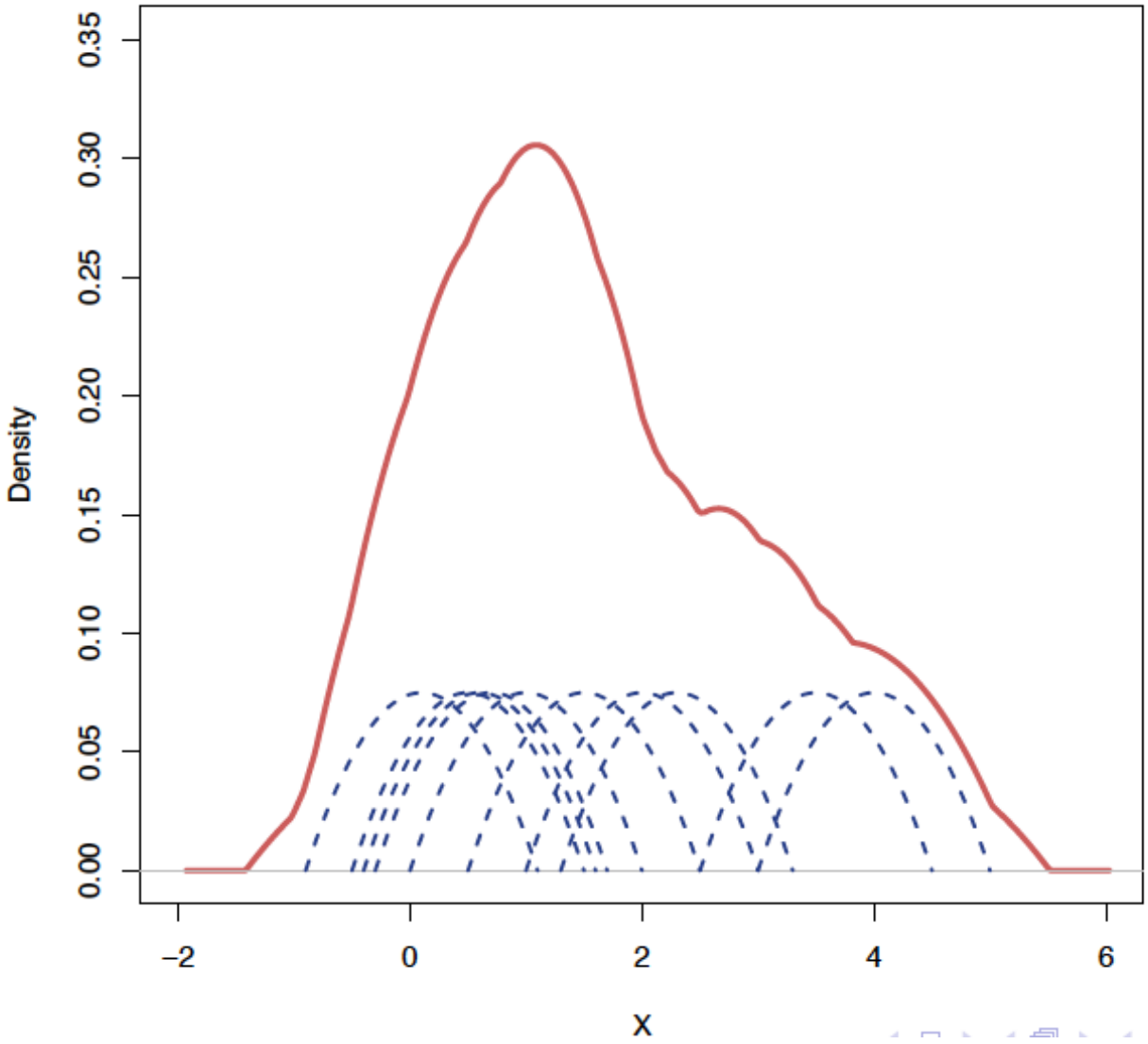
Explanation
Given that $K(x)$ is the standard normal density function, then by definition given in the equation above represents a normal density with standard deviation h.

Submit You have used 0 of 2 attempts

Question 2

1 point possible (graded)
Which of these lines illustrates the bandwidth of the kernel density estimator shown in figure below?

- Module 7: Assessing and Deriving Estimators - Confidence Intervals, and Hypothesis Testing
- Module 8: Causality, Analyzing Randomized Experiments, & Nonparametric Regression
- Module 9: Single and Multivariate Linear Models
- Module 10: Practical Issues in Running Regressions, and Omitted Variable Bias
- Module 11: Intro to Machine Learning and Data Visualization
- Module 12: Endogeneity,



Instrumental Variables, and Experimental Design

Exit Survey

Final Exam

- a. The distance between the two points at which a given blue dashed line intersects the x-axis
- b. The distance between the two points at which the leftmost blue dashed line first intersects the x-axis and at which the rightmost blue dashed line last intersects the x-axis.
- c. The maximum height of a given blue dashed line
- d. The maximum height of the red line

Explanation

As Professor Duflo explained in lecture, the bandwidth of the kernel density estimator is the width of the interval at which the kernel function is estimated.

Submit You have used 0 of 2 attempts

Discussion

Topic: Module 3 / Kernel Density Estimation, Part I - Quiz

Show Discussion