11.220 Quantitative Reasoning & Statistical Methods for Planners I
Spring 2009

Quantitative Reasoning and Statistical Methods (11.220) Problem Set #1

Ezra Haber Glenn, AICP

Due: In section 2/12/09 or 2/12/2009

1 From Meier *et al.*

- Chapter 2: 2.1 , 2.2, 2.3

- Chapter 5: 5.13, 5.14, 5.15

2 From Horwitz and Ferleger

- Chapter 2: p. 47, B.1.b-e

3 Problems for Discussion

For these problems, you do not need to write up formal responses, but please come prepared to discuss them in class/section.

1. Review this short article from the *The New York Times*: "Housing Affordability at Record High", Catherine Rampell; January 30, 2009.[1] What questions does it raise? What implications does it suggest? What additional information does it assume?

2. Imagine you were contacted by the City of Boston to assist with a study on the cost savings of replacing old fashioned (incandescent) light bulbs with newer "compact fluorescent" ones in all City-owned properties. In order to determine the cost savings due to reduced energy bills and longer bulb life, the City first needs a good estimate of the total number of bulbs they currently have. How would you recommend they arrive at this figure?

3. Table R0501 of the 2007 American Community Survey provides estimates of the percentage of each state (and the District of Columbia) that is foreign born (see next page). The median of these figures is 6.10%; the mean is 8.45%. In your opinion, which state is most representative of the country in terms of its percentage of foreign born population? Why? What sort of graphic would you use to help understand these numbers and their distribution?

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[1] http://economix.blogs.nytimes.com/2009/01/30/housing-affordability-at-record-high/?scp=2\
&sq=median\&st=cse

State	Percentage
California	27.40
New York	21.80
New Jersey	19.90
Nevada	19.40
Florida	18.90
Hawaii	17.30
Texas	16.00
Arizona	15.60
Massachusetts	14.20
Illinois	13.80
Connecticut	12.80
Rhode Island	12.70
District of Columbia	12.60
Maryland	12.40
Washington	12.30
Virginia	10.30
Colorado	10.00
Oregon	9.80
New Mexico	9.30
Georgia	9.10
Utah	8.20
Delaware	7.60
Alaska	7.20
North Carolina	7.00
Minnesota	6.60
Michigan	6.10
Kansas	6.00
Idaho	5.60
Nebraska	5.60
Pennsylvania	5.40
New Hampshire	5.10
Oklahoma	5.00
Wisconsin	4.50
South Carolina	4.30
Arkansas	4.20
Indiana	4.20
Tennessee	4.10
Iowa	3.90
Ohio	3.70
Missouri	3.50
Maine	3.40
Vermont	3.40
Louisiana	3.30
Wyoming	3.10
Alabama	3.00
Kentucky	2.50
North Dakota	2.40
South Dakota	1.80
Mississippi	1.70
Montana	1.70
West Virginia	1.30

Table 1: American Community Survey 2007, R0501: Percent of People Who Are Foreign Born