



# PROJECT-SET

Statistics Education for Teachers

## Mira Beach #1

Task adopted from [www.illustrativemathematics.org](http://www.illustrativemathematics.org) aligned with standard S-IC

Written task aligned with SV: Loop 2

In the town of Mira Beach, Florida the city council has taken a census of their population to get information about the city. The Town Census dataset contains information about every person in the population of Mira Beach. There are 1400 people that live in Mira Beach. The dataset contains information on the age, gender, race, marital status, school attendance, public or private school, and income of the residents of Mira Beach.

\*For the following two questions, you may save and provide output for your answer or handwrite the answers in the space below each question.

1. Using these data, randomly sample 30 people 100 times. For each sample find the average income. Use the table below to record the average incomes.


2. Construct an approximate sampling distribution for the average income in the town of Mira Beach.

3. What is an implausible value for the average income of people in Mira Beach? Justify your answer referring to your results from questions 1 & 2.
  
4. a) What is a plausible value for the average income of people in Mira Beach? Justify your response, referring to your results from questions 1 & 2.  
  
b) If possible, give one other plausible value for the average income of people in Mira Beach and justify your response based on your results from questions 1 & 2. If it is not possible, explain why.

As part of a marketing campaign and among other standard pieces of information, the city council would like to know whether the students in the town consider their parents to be “strict.” They do not have time to collect this extra information from all the students in the town, so each city council member plans to obtain data from a sample of 30 students.

5a. Describe the parameter of interest and a statistic the city council could use to estimate the parameter in this scenario.

5b. The city council quickly realizes that, as there is no definition of “strict”, they could not simply ask a student, “Are your parents or guardians strict?” Write a question that could provide objective data to answer their question.