

City Semester  
Rents

Name:\_\_\_\_\_

*Complete all work on a separate sheet of paper with exercises clearly labeled and all reasoning and work given.*

1. First let us examine the relationship between rents and different measures of income.
  - (a) Start by researching and summarizing the difference between household income and family income. How are they different? Explain why one is typically larger than the other.
  - (b) Generate a scatterplot to look at the relationship between income and monthly rent. Make 1-2 observations about the plot.
  - (c) Give the equation of the least squares regression line and use it to predict the rents if median income next year is \$57,000.
  - (d) How confident are you in the model? Explain using residuals,  $r^2$  value, and other observations.
2. Now let us look at the relationship between rents and GDP measured in billions.
  - (a) Start by researching roughly how GDP is calculated. What does it represent? How does it accurately or inaccurately convey the economic strength of a region?
  - (b) Generate a scatterplot to examine the relationship between monthly rents and GDP. Make 1-2 observations about the plot.
  - (c) Give the equation of the least squares regression line and use it to predict the rents if the GDP of NY next year is \$1350 billion.
  - (d) How confident are you in the model? Explain using residuals,  $r^2$  value, and other observations.
3. Conduct any other research (15-20 minutes) you may want to bring to the analysis and give a short paragraph summary of your thoughts about rents.