1. Use the table below to calculate appropriate descriptive statistics (*Percentages, Medians, Means, Variance, Standard Deviations)* for the following variables. Calculate 95% confidence intervals for the interval-ratio variables.
2. To estimate the age, race and gender of arrestees taken into custody by a major city police department, a colleague suggests looking at data from the next 100 arrestees taken into custody beginning on Saturday, September 3, 2011. From his statistics course, he knows that a sample size of 100 is generally sufficient. *Explain why this is not a good strategy*. Suggest an acceptable one.
3. Using data from a random sample of 100 convicted defendants, you find that the proportion of men convicted for Driving Under the Influence is 0.33. (The proportion of those convicted for other offenses is 0.67.) Calculate a 95% confidence interval for the proportion and explain why it is more useful than a point estimate. Is this result consistent with a null hypothesis that the true population is 0.25 (alpha = .05)
4. Explain the difference between the information given by a test of statistical significance, such as Chi Square and a measure of association such as lambda or gamma. Can a test of significance show a significant relationship while a measure of association shows a weak relationship between the variables*? Explain your answer.*
5. You hypothesize that in [a random sample of probationers](https://onlinecampus.bu.edu/bbcswebdav/pid-1446210-dt-content-rid-4422247_1/xid-4422247_1), there is a relationship between a probationer’s Grasmick Self Control Scale Score (SELF\_CON) and the Highest Grade (EDUC) he completed. Remember that the low scores on the Grasmick Scale are associated with low self control.
   1. *You do not have to test the hypothesis*, but you need to calculate a and b and write out the regression equation.
   2. Calculate the SSE
   3. Calculate the PRE measure r2, interpret

*What Education level (Highest Grade Completed) would you predict for a person with a Grasmick Score of 40?*

**TABLE**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **CASE** | AGE | RACE | Education | MARITAL | ARR | GOV\_OFF | SELF\_CON | PCL |
|  | Variable 1 | Variable 2 | Variable 4 | Variable 5 | Variable 6 | Variable 8 | Var 10 | Variable 11 |
| **1** | 18 | B | 8 | S | 1 | Sex | 56 | 6 |
| **2** | 20 | B | 12 | S | 4 | Person | 32 | 20 |
| **3** | 21 | B | 14 | S | 2 | Person | 32 | 20 |
| **4** | 23 | B | 10 | S | 3 | Drugs | 32 | 20 |
| **5** | 24 | B | 10 | S | 4 | Property | 32 | 34 |
| **6** | 25 | W | 13 | M | 4 | Person | 32 | 20 |
| **7** | 26 | B | 12 | D | 1 | Person | 32 | 20 |
| **8** | 27 | W | 13 | D | 2 | Person | 32 | 20 |
| **9** | 29 | B | 10 | M | 2 | Sex | 36 | 28 |
| **10** | 30 | B | 16 | D | 3 | Person | 36 | 20 |
| **11** | 31 | B | 12 | M | 6 | Property | 32 | 20 |
| **12** | 33 | B | 11 | S | 9 | Property | 32 | 20 |
| **13** | 34 | B | 11 | M | 7 | Drugs | 32 | 34 |
| **14** | 36 | B | 10 | D | 11 | Person | 32 | 20 |
| **15** | 39 | B | 10 | S | 9 | Person | 32 | 20 |
| **16** | 42 | W | 14 | D | 6 | Person | 32 | 20 |
| **17** | 44 | B | 8 | D | 11 | Property | 32 | 34 |
| **18** | 46 | W | 12 | D | 7 | Property | 40 | 20 |
| **19** | 48 | B | 12 | M | 7 | Person | 32 | 20 |
| **20** | 52 | W | 9 | M | 6 | Person | 36 | 20 |
| **21** | 62 | W | 8 | S | 7 | Person | 27 | 26 |