

Math 110
Quiz 2 Sample
February 7, 2010

Be sure to provide explanations for your answers as indicated.

1. The average ACT science score for Texas in 2008 was 20.5 with an SD of 4.8. A total of 79,050 students took the test. Based on this information, estimate the number of students who scored between 25 and 30 inclusive. (*Hint:* How can you use information in the z -table to find the area under the normal curve that corresponds to “between 25 and 30 inclusive”?)

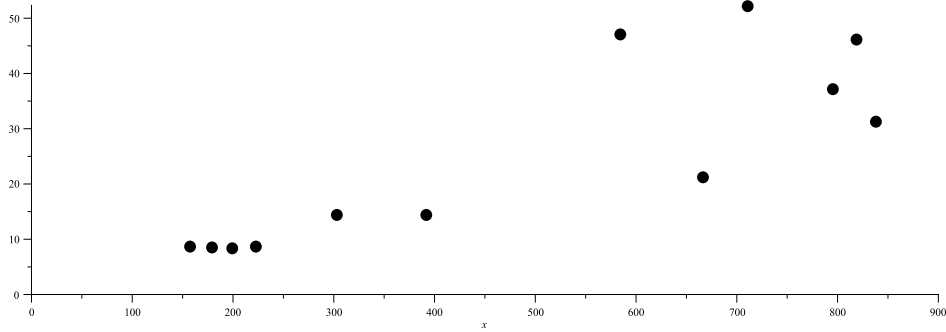


Figure 1: Scatter Plot for Detroit data.

Year	1961	1962	1963	1964	1965	1966	1967
Handguns/100,000	178.15	156.41	198.02	222.1	301.92	391.22	665.56
Homicides/100,00	8.6	8.9	8.52	8.89	13.07	14.57	21.36
Year	1968	1969	1970	1971	1972	1973	
Handguns/100,000	1131.21	837.6	794.9	817.74	583.17	709.59	
Homicides/100,00	28.03	31.49	37.39	46.26	47.24	52.33	

2. The data in the table shown above is for the number of handguns per 100,000 people and the number of homicides per 100,000 people in Detroit from 1961 to 1973. A scatter plot for the data is shown above. (Data collected by J.C. Fisher from the StatsLib Datasets Archive at Carnegie Mellon University). The mean and SD for the number of handguns are 537.5 and 304. The mean and SD for the number of homicides are 25.1 and 15.74. The r value for the data is .73.
- Plot the SD line for the data on the scatter plot. Be sure to label the point of averages.
 - Plot the regression line for the data on the scatter plot.
 - Can you draw any conclusions from the data and the scatter plot? If so, what are they and why, if not, why not?