**Hand in for grading 5.5, 5.9, 6.3 and 6.6.**  Include your Stata .do-file along with your homework.

5.5(a)



It seems to be an outlier, on the bottom left of scatterplot graph.

use "E:\NYU Master\Semester 1\APSTA-GE 2001 Statistic for Behavior and Social Science\Data sets\NELS.dta"

twoway scatter achsci12 gender, mlabel(id), if region == 4, xlabel(0 1, valuelabel) //5.5(a)

5.5(b) r=0.1664

use "E:\NYU Master\Semester 1\APSTA-GE 2001 Statistic for Behavior and Social Science\Data sets\Framingham.dta"

correlate BMI1 TOTCHOL1 //5.5(b)

5.5(c)

The most unusual ID in this trend is 205, this id is associated with a woman and she is 42.



5.5(d) r=0.1832. The r value is bigger, which suggests a slightly huger correlation between these two variables.

correlate BMI1 TOTCHOL1 if ID!=205

5.9(a)

According to *Figure 1*, the SES status of students whose families owns a computer when they were in 8th grade are tend to be higher overall.



Figure 1

twoway (scatter ses computer) (lfit ses computer) //5.9(a)

5.9(b) r=0.3487, which means that students whose families have a computer when they were 8th grade have a chance to have higher Social-economic status than those who do not.

correlate ses computer //5.9(b)

6.3(a)



Figure 2

Both variables are interval level, so the regression measurement is appropriate.

twoway (scatter ses achmat12) (lfit ses achmat12) //6.3(a)

6.3(b)

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Figure 3

According to *Figure 3*, the equation is .

regress achmat12 ses //6.3(b)

6.3(c) According to Figure 3, P<0.001, so the regression equation is precise in 95% Confidence Interval. So it’s safe to say that each one point increase in ses can cause a 0.3680 increase in achmat12.

6.3(d) A person whose ses score is 0 is predicted to score 50.123 in 12th grade math achievement. But since there’s no one actually have “zero” social-economic status, this explanation is contrived to me. If in research, someone report that they score 0 in ses, I will either re-consider the scale the present research is using since it is obvious that the scale itself is not sensitive enough, or I will just exclude those samples in my statistic analysis because they’re invalid samples.

6.3(e) According to the equation: , when a person get 20 for Social-economic status, its predicted achmat12 score will be 57.48258.

6.3(f) 59.69

6.3(g) 58.59

6.6(a)





twoway (scatter BMI1 DIABP1) (lfit BMI1 DIABP1), ytitle(BMI & DIABP1)

twoway (scatter BMI1 HEARTRTE1) (lfit BMI1 HEARTRTE1), ytitle(BMI & HEARTRTE1)

6.6(b)

Diastolic blood pressure (r = 0.374) has a higher r value than heart rate (r = 0.0244), because the former has a steeper regression line.

correlate BMI1 DIABP1

correlate BMI1 HEARTRTE1

6.6(c) Diastolic blood pressure.

The regression coefficient for DIABP1&BMI1 is 1.0427 and the regression coefficient for BMI1&HEARTRTE1 is 0.75. So a one unit increase in BMI associated with a great increase in diastolic blood pressure.

regress DIABP1 BMI1

regress HEARTRTE1 BMI1 //6.6(c)