Assignment 2 by Yewei Sun

**FOR GRADING: Submit as a Word document in class next week the solutions to Exercises 2.15, 2.24, and 3.13.**

2.15(a)

histogram ses, by(computer) //2.15(a)

According to the output(see as Figure 1), the group which **owned a computer** has the single highest ses score.



Figure 1

2.15(b)

Yes.

histogram ses, by(computer) percent normal

by computer, sort:summarize ses, detail //2.15(b)

If we add a normal distribution line onto the histogram graph(see as Figure 2), we can see that the normal distribution line of the group which owned a computer is negatively skewed, while the group which do not owned a computer is positively skewed. This means the bulk of the score in the former group is higher than the later group. I also run the *summarize* command and gained the skewness of each group, the result indicated the same(it’s 0.1008 for no vs. -0.429 for yes).



Figure 2

2.15(c) No, according to Figure 2, the spread of the two group are quite similar

2.24(a)

graph box slfcnc08 slfcnc10 slfcnc12 //2.24(a)



Figure 3

According to Figure 3, we can see that the distribution of self-concept in eight grade is negatively skewed.

2.24(b) 8th grade self-concept.

2.24(c) According to the 50th percentile shown in Figure 3, 12th grade has the overall highest level of self-concept.

2.24(d)

summarize slfcnc08 slfcnc10 slfcnc12, detail //2.24(d)

According to output, 12th grade has the highest single self-concept score, which is approximately 43.

2.24(e) 12th grade.

3.13(a)

graph box tcherint, by(gender)

by gender, sort:summarize tcherint, detail //3.13(a)

According to the box plot(see as Figure 4), the distribution of males and females are quite similar in terms of *tcherint.* The mean for males is 1.947 and IQR = 3. The mean for females is 1.96 and the IQR = 2



Figure 4

3.13(b)

graph box achrdg08 achrdg10 achrdg12, by(gender)

by gender, sort:summarize achrdg08 achrdg10 achrdg12, detail //3.13(b)

According to Figure 5, males and females display similar patterns of change in achievement in reading across 8th, 10th, 12th grades. The means for males in these 3 grades are 55.54, 56.25, 55.31, for females, the means are 56.4, 55.9, 55.8.



Figure 5

3.13(c)

graph box absent12 cuts12 late12, by(gender)

by gender, sort:summarize absent12 cuts12 late12, detail //3.13(c)

According to box plot(see as Figure 6), we can conclude that the overall pattern of males and females patterns of schools attendance in 12th grade is quite similar, but there’s several differences worth to be noticed. Females tend to be more variable regarding late for school in 12th grade due to their much wider IQR. Females tend to have slightly higher chance to missed 3-6 times of school absence in 12th grade than males. The mean for *absent12* is 1.387 for males and 1.74 for females. The later is much closer to 2(3-6 times of school absence).



Figure 6