STA511 Homework #1

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1. I have read the first five chapters of R Programming

2. Here's my answer to problem two part a.

   ```
   X <- runif(1000, min =0, max =1)
   Y <- ((3.14*X)- (3.14/4))
   Y <- runif(1000, min =0, max =1)
   par(bg="grey")
   par(mfrow=c(1,2))
   hist(X)
   hist(Y)
   ```

3. Here's my answer to problem two part b
   Normal distribution

4. Here's my answer to problem two part c

   ```
   Z <- runif(1000, min =0, max =1)
   hist(X+Z)
   ```

5. Here's my answer to problem two part d

   ```
   library(MASS)
   truehist(X+Z)
   ```

   In a hist it is plotted against frequency and in a truehist it is plotted
   against density

6. Here's my answer to problem two part e
   Normal distribution

7. My answer to # 3, it has multiple parts.

   (a) Here how I answered part a.
       ```
       class = read.table("classlist.txt",header = TRUE,  sep="\t")
       class$obs <- runif(35, min= 60, max =100)
       ```

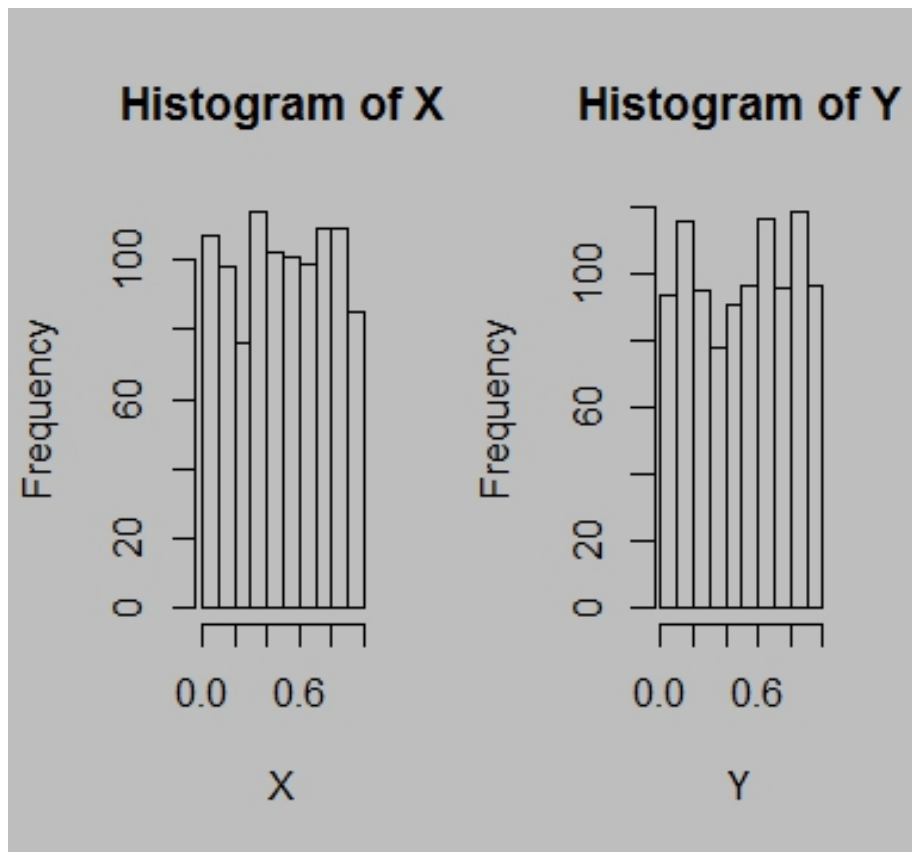   (b) Here's my code for part b

Figure 1: Histograms of X and Y

```
grade <- cut(class$obs,
            breaks=c(0,seq(75,100,by= 5)),
          labels =c("C","B-","B","B+","A-","A"))
class$grade <- grade
xtable(class, caption ="List of students in class")
```

xtable(class, caption="List of students in class")
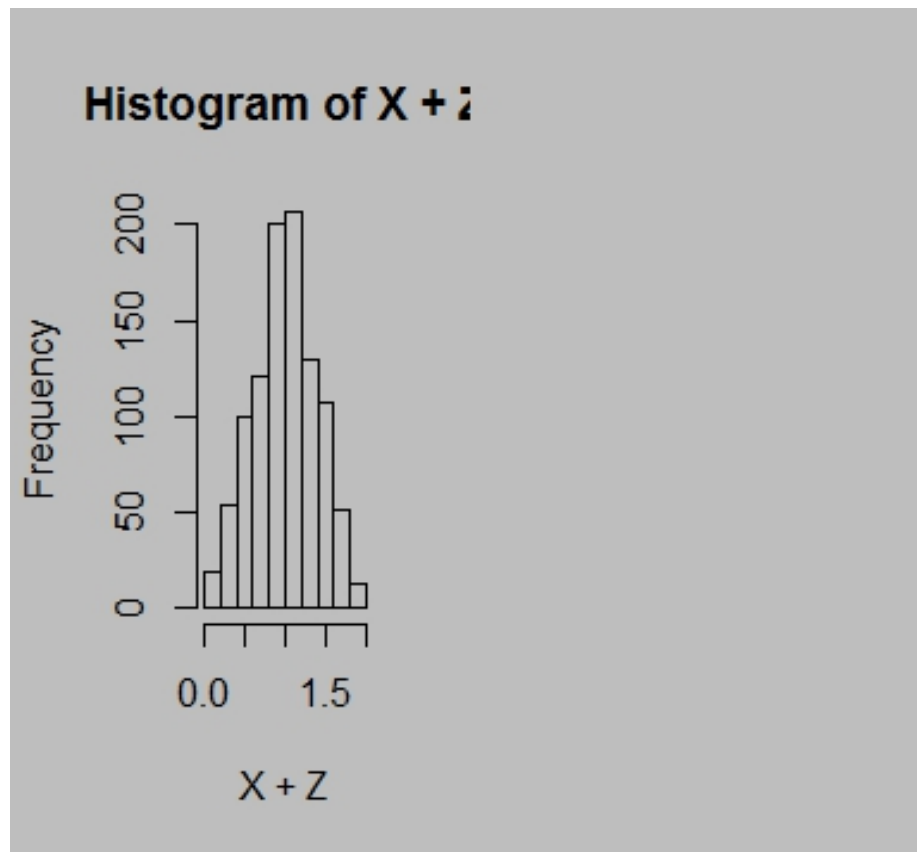
8. This problem involves the table below

Figure 2: Histograms of X + Z
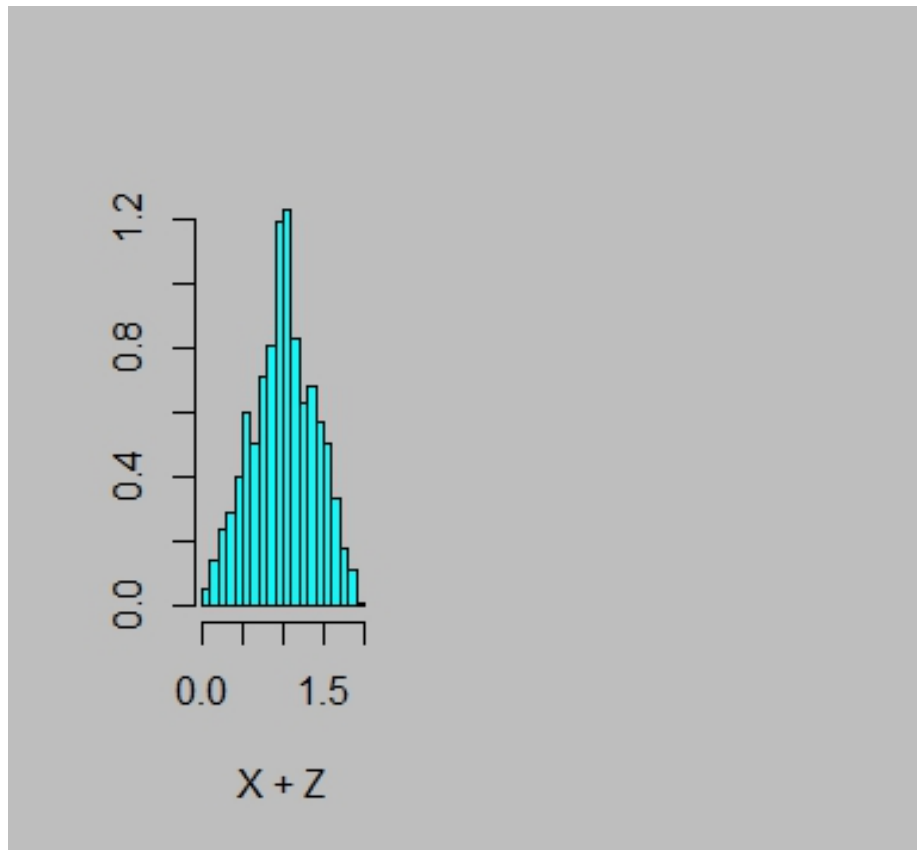
Figure 3: True Histograms of X and Z

Range	Grade
≥ 95	A
≥ 90 and < 95	A-
≥ 85 and < 90	B+
≥ 80 and < 85	B
≥ 75 and < 80	B-
< 75	C

	Name	Program.and.Plan	Level	obs	grade
1	An,Bo	Pharmaceutcl Sci Doctoral -	Doctoral 2	84.06	B
2	Bu,Yahao	Public Health Masters -	Masters 2	84.59	B
3	Chang,Huiru	Public Health Masters -	Masters 2	68.20	C
4	Chen,Jiangwang	Public Health Masters -	Masters 2	67.98	C
5	Eum,Youngseob	Arts & Sciences Doctoral -	Doctoral 1	79.84	B-
6	Ganley,Kevin	Public Health Masters -	Masters 1	78.21	B-
7	Hess,Katelyn	Arts & Sciences Masters -	Masters 1	90.12	A-
8	Hsu,En-Shuo	Public Health Masters -	Masters 1	71.33	C
9	Jai Kumar Ahuja,Suruchi	Public Health Masters -	Masters 1	92.27	A-
10	Jin,Yuxuan	Public Health Doctoral -	Doctoral 1	60.91	C
11	Karaesmen,Ezgi	Roswell Park Doctoral -	Doctoral 2	92.22	A-
12	Krishnan,Krithika	Public Health Masters -	Masters 1	76.29	B-
13	Lin,Jieya	Public Health Masters -	Masters 1	66.75	C
14	Mandava,Aishwarya	Public Health Masters -	Masters 1	62.06	C
15	Marsales,Harry	Public Health Masters -	Masters 2	96.86	A
16	Morrell,Kayla	Public Health Masters -	Masters 1	80.10	B
17	Niu,Jin	Pharmaceutcl Sci Doctoral -	Doctoral 2	64.41	C
18	Rizvi,Abbas	Roswell Park Doctoral -	Doctoral 2	77.86	B-
19	Rosario,Spencer Rae	Roswell Park Doctoral -	Doctoral 2	82.70	B
20	Schiller,Emily	Public Health Masters -	Masters 1	95.43	A
21	Song,Jiaming	Public Health Masters -	Masters 1	74.51	C
22	Spencer,Mary	Public Health Masters -	Masters 1	70.86	C
23	Sun,Xiaoxi	Public Health Masters -	Masters 1	71.35	C
24	Tanue,Terence Wankah	Public Health Masters -	Masters 1	98.47	A
25	Tian,Mingmei	Public Health Masters -	Masters 2	89.54	B+
26	Vucic,Luther	Public Health Masters -	Masters 1	65.85	C
27	Wackeroth,Wolf Michael	Public Health Masters -	Masters 1	78.91	B-
28	Wang,Jiefei	Public Health Masters -	Masters 1	71.54	C
29	Wang,Xue	Roswell Park Doctoral -	Doctoral 2	86.20	B+
30	Wu,Yin	Grad Sch of Ed Doctoral -	Doctoral 2	78.87	B-
31	Yang,Yang	Grad Sch of Ed Doctoral -	Doctoral 2	91.81	A-
32	Yang,Yujie	Pharmaceutcl Sci Doctoral -	Doctoral 2	67.70	C
33	Yang,Zeyu	Public Health Masters -	Masters 1	61.39	C
34	Yu,Xinyang	Biomedical Sci Doctoral -	Doctoral 2	84.55	B
35	Zhao,Yichen	Grad Sch of Ed Doctoral -	Doctoral 2	70.16	C

Table 1: List of students in class