STAT 13 Homework 1 Solutions

1.1
a.
```
1 | 7
2 | 0 0 1 1 6 7 7 7 8 8 8 9 9 9
3 | 0 0 1 1 3 3 3 4 5 5 5 7 7
4 | 1 3 8 9
5 | 1 1 4 5
```

b.
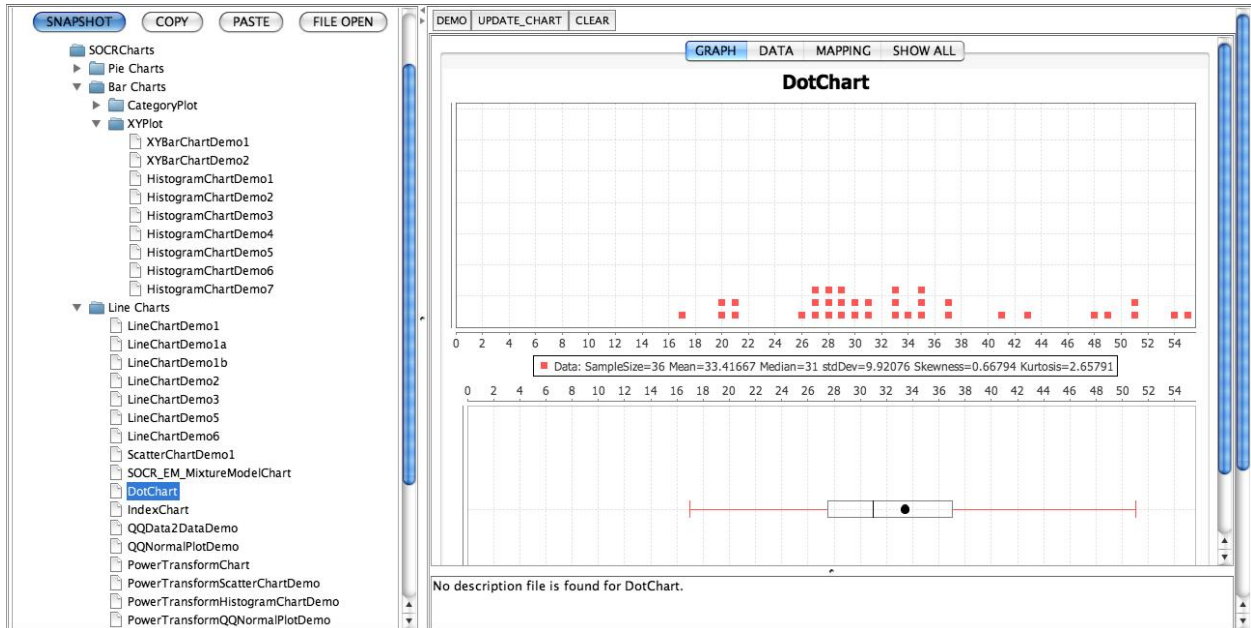
1.2

# of segments	frequency
17	1
20	2
21	2
26	1
27	3
28	3
29	3
30	2
31	2
33	3
34	1
35	3
37	2
41	1
43	1
48	1

# of segments	frequency
49	1
51	2
54	1
55	1
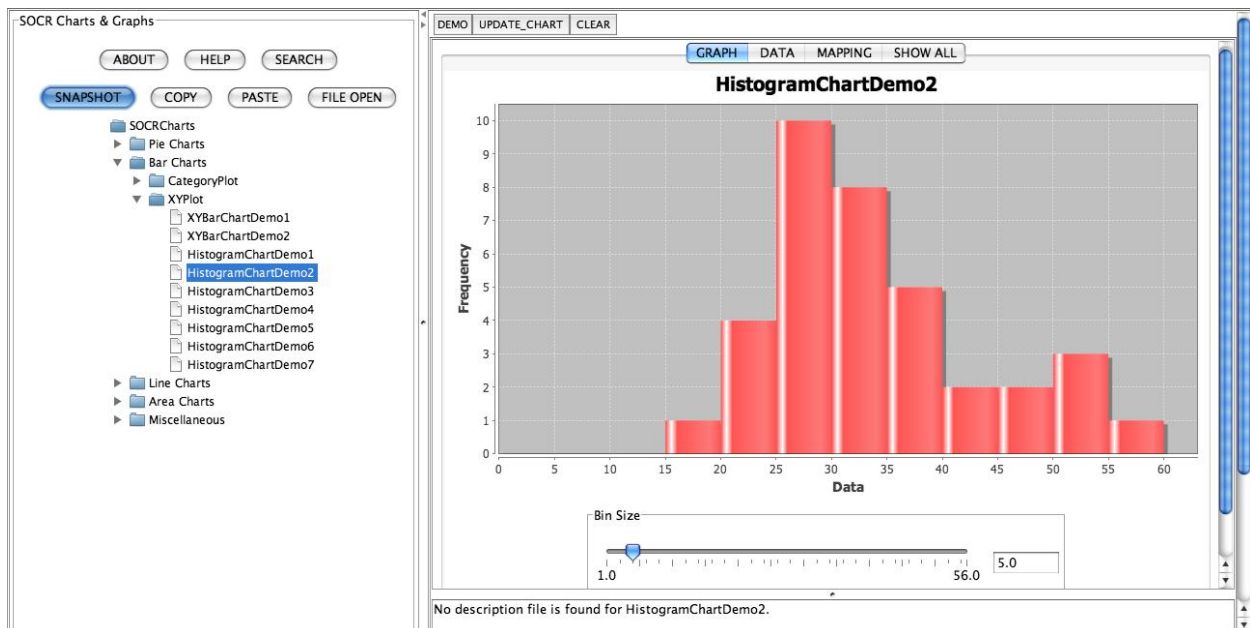
1.3: The answer is (b). (a) and (c) are eliminated because the min. and max. don't match up. (d) is not it because its median matches up with Q3 in (b), and that number (roughly 27 or 28) looks much more like Q3 than the median in the histogram.

1.4
a) mean = 6.35714, st. dev. = 0.66548, so we should hope that most (around 95%) of our data should be between 5.0262 and 7.6881.
b) median = 6.2, IQR = 0.85
c) coefficient of variation = sd/mean = 0.10468
d) mean = 6.78571, st. dev. = 1.66476, median = 6.2, IQR = 0.85, most of the data should be between 3.45619 and 10.11524;
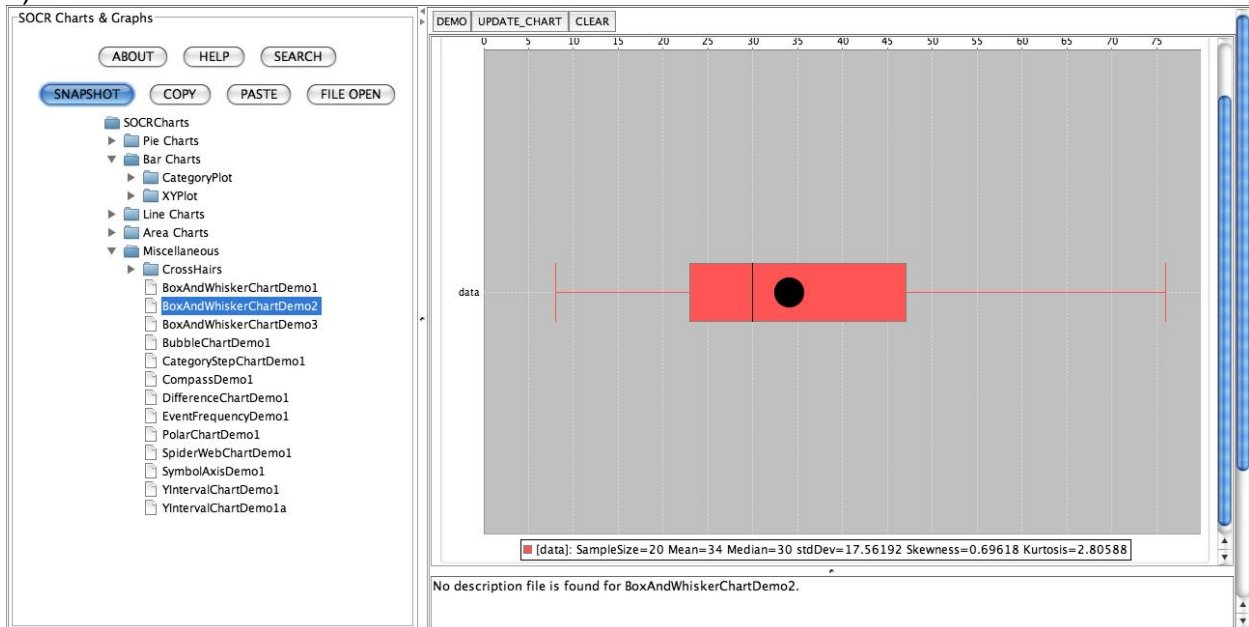median & IQR are resistant to the change, mean & sd are not resistant

1.5
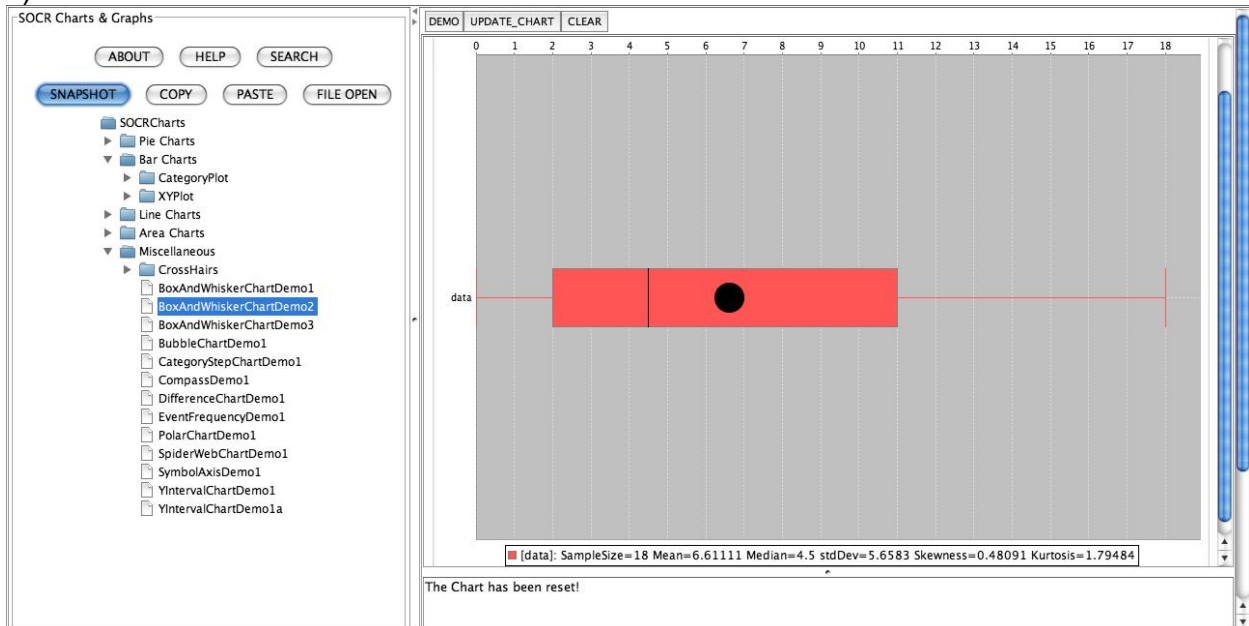a) median = 30, Q1 = 23.5, Q3 = 46.5
b) IQR = 23
c)

[data]: SampleSize=20 Mean=34 Median=30 stdDev=17.56192 Skewness=0.69618 Kurtosis=2.80588

No description file is found for BoxAndWhiskerChartDemo2.

1.6
a) median = 38   b) Q1 = 36, Q3 = 41
c)

[data]: SampleSize=18 Mean=6.61111 Median=4.5 stdDev=5.6583 Skewness=0.48091 Kurtosis=1.79484

The Chart has been reset!

d) Within 1 SD of the mean corresponds to the interval [35.25, 41.65], meaning the numbers 36 through 41 fall in the range. There are 11 + 12 + 18 + 13 + 10 + 15 = 79 of them, meaning 79/119 = 66.4% of the observations are within 1 SD of the mean.