AP STATISTICS   Activity 0820 - Box and Whiskers   Name:
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Problem 1. (Political Science: Georgia Democrats)
How Democratic is Georgia? County by county results are shown for a recent election. For your convenience, the data have been sorted in increasing order.

```
Percentage of Democratic Vote by Counties in Georgia
31  33  34  34  35  35  35  36  38  38  38  39  40  40  40  40
41  41  41  41  41  41  41  42  42  43  44  44  44  45  45  46
46  46  46  47  48  49  49  49  49  50  51  52  52  53  53  53
53  53  55  56  56  57  57  59  62  66  66  68
```

(a) Find the mean, median, and mode. Find Q_1 and Q_3. Find the 10th and 90th percentile.

(b) Make a box-and-whisker plot of the data. Find the interquartile range.

Problem 1 (continued). How Democratic is Georgia? County by county results are shown for a recent election. For your convenience, the data have been sorted in increasing order.

```
Percentage of Democratic Vote by Counties in Georgia
31  33  34  34  35  35  35  36  38  38  38  39  40  40  40  40
41  41  41  41  41  41  41  42  42  43  44  44  44  45  45  46
46  46  46  47  48  49  49  49  49  50  51  52  52  53  53  53
53  53  55  56  56  57  57  59  62  66  66  68
```

(c) Make a frequency table using five classes. Draw the histogram. Then estimate the mean and sample standard deviation using the frequency table. Compute a 75% Chebyshev interval centered about the mean.

(d) If you have a statistical calculator or computer, use it to find the actual sample mean and sample standard deviation. Otherwise, use the values $\sum x = 2769$ and $\sum x^2 = 132179$ to compute the sample mean and sample standard deviation.