28. a)
10	1 3 9
11	5
12	6 6 9
13	7 7
14	0 8
15	2 4
16	5 5
17	8
18	
19	
20	0

200 is a potential outlier creating a gap in the distribution. Because of the outlier, the median should be used as the measure of center. This value is located at 138.5. The spread of the scores is from 101 to 178, excluding 200, so the range is 77.

   b)   The mean score is 141.056.
   c)   The median is 138.5, the average of the 9th and 10th scores. The mean is larger than the median because of the unusually large score of 200, which pulls the mean toward the long tail of the distribution.
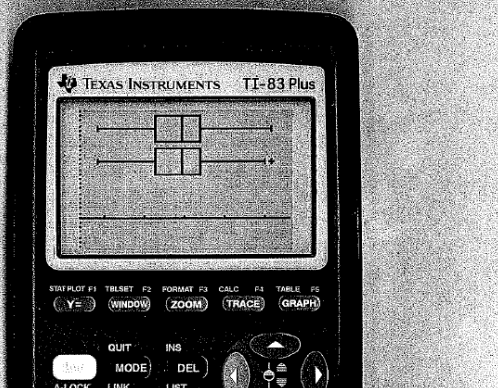
30.   The mean salary is $60,000. Seven of the eight employees earned less than the mean. The median is $22,000. An unethical recruiter would report the mean salary as typical. Then median is a more accurate depiction of a typical salary because it is not influenced by the outlier of $270,000.

33.
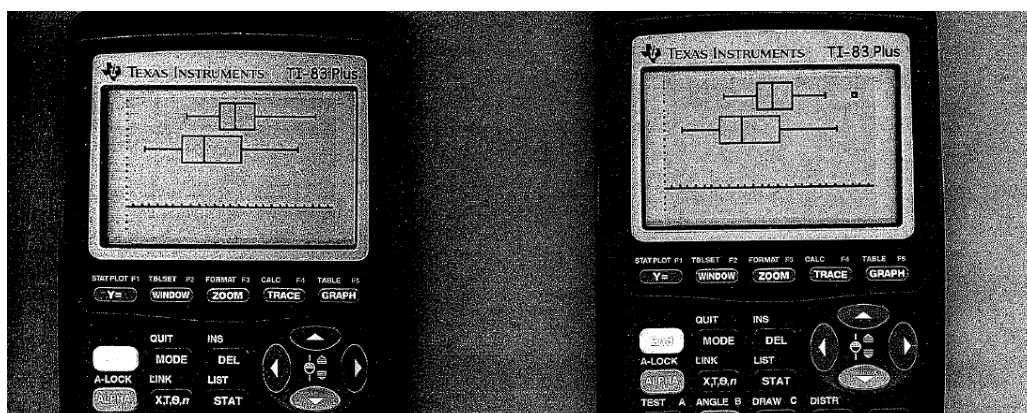
1.34 PREZ

34. a)

The mean and median should be approximately equal since the distribution is roughly symmetric.

b)   The five-number summary is 42, 51, 54, 59, 69. The mean is 54.805 which is very close to the median of 54.

c)   The IQR is 59 – 51 = 8.

e)   According to the 1.5(IQR) criterion, none of the presidents would be classified as outliers.

36. a)   The total spent by the 50 shoppers is 34.7(50) = $1735.

b)
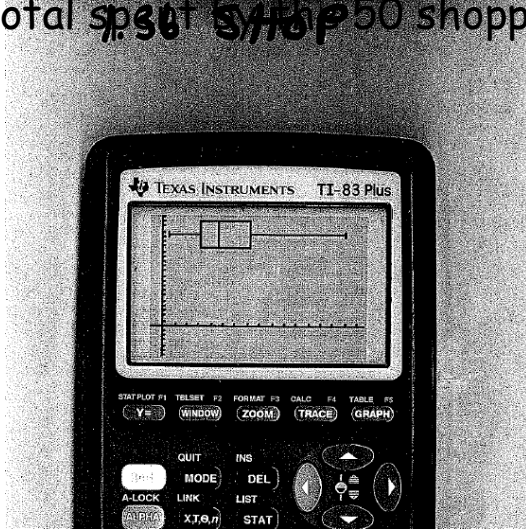
c)   According to the 1.5(IQR) criterion, the outliers are $85.76, $86.37, and $93.34. [Show your work for these calculations. See 38b)]

38. a)   The five-number summary is 5.7%, 11.675%, 12.75%, 13.5%, and 17.6%.

   b)   The IQR is 13.5 – 11.675 = 1.825.
         1.5(1.825) = 2.7375
         13.5 + 2.7375 = 16.2375   Outliers are above this value.
         11.675 – 2.7375 = 8.9375 Outliers are below this value.
         Therefore 8.5% is an outlier.