Practice Problem Set

ANSWER KEY

1. A class set of grades on a Social Studies test are listed below.

83, 95, 65, 100, 80, 55, 96

a) Calculate the **mean absolute deviation** (M.A.D.). *Round the M.A.D to the nearest whole*.

Mean = $\frac{83+95+65+100+80+55+96}{7} = \frac{574}{7} = 82$

DATA	DATA – MEAN	|DATA – MEAN|
55	55 – 82 = **-27**	**27**
65	65 – 82 = **-17**	**17**
80	80 – 82 = **-2**	**2**
83	83 – 82 = **1**	**1**
95	95 – 82 = **13**	**13**
96	96 – 82 = **14**	**14**
100	100 – 82 = **18**	**18**

Average of 3rd Column = M.A.D = $\frac{27+17+2+1+13+14+18}{7} = \frac{92}{7} = 13.142\ldots$

The mean absolute deviation is 13.

b) What does this number tell us about the data set?

The average distance of each data point from the mean is about 13.

c) How do you think the M.A.D found above would compare with the M.A.D of the class scores listed below? What does this say about the variability of both data sets? *You do not need to calculate the M.A.D to answer this question.*

88, 94, 92, 100, 89, 85, 96

Looking at the data, we can infer that since the range is a lot smaller than the range of the data set above, the M.A.D will be smaller than the M.A.D from above. The test scores from above is wider spread. The test scores shown here have less variability (data is closer together).

2. Statistical data from Mr. John's period four class shows that the test scores have a mean absolute deviation of 5. Statistical data from Mrs. Goldstein's period 7 class shows that the test scores have a mean absolute deviation of 10. What conclusion can be drawn?

A. In general, Mr. John's class does better than Mrs. Goldstein's class.
B. In general, Mrs. Goldstein's class does better than Mr. John's class.
C. The test grades in Mr. John's class are more spread apart.
D. The test grades in Mrs. Goldstein's class are more spread apart.

Mrs. Goldstein's class has a larger M.A.D. The data has a wider spread (more variability).