

4.3: Exercises

1. The following masses were recorded for 12 different U.S. quarters (all values given in grams):

5.683	5.549	5.548	5.552
5.620	5.536	5.539	5.684
5.551	5.552	5.554	5.632

Report the mean, median, variance, standard deviation, range, IQR, and MAD for this data.

2. A determination of acetaminophen in 10 separate tablets of Excedrin Extra Strength Pain Reliever gives the following results (in mg). The data in this problem are from Simonian, M. H.; Dinh, S.; Fray, L. A. *Spectroscopy* **1993**, 8(6), 37–47.

224.3	240.4	246.3	239.4	253.1
261.7	229.4	255.5	235.5	249.7

Report the mean, median, variance, standard deviation, range, IQR, and MAD for this data.

3. Salem and Galan developed a new method to determine the amount of morphine hydrochloride in tablets. An analysis of tablets with different nominal dosages gave the following results (in mg/tablet). The data in this problem are from Salem, I. I.; Galan, A. C. *Anal. Chim. Acta* **1993**, 283, 334–337.

100-mg tablets	60-mg tablets	30-mg tablets	10-mg tablets
99.17	54.21	28.51	9.06
94.31	55.62	26.25	8.83
95.92	57.40	25.92	9.08
94.55	57.51	28.62	
93.83	52.59	24.93	

For each dosage, report the mean, median, variance, standard deviation, range, IQR, and MAD for this data.

4. Use the data set you create in Exercise 2.32 for the daily roadside monitoring of NOX concentrations and air temperatures along Marlybone Road. Report the mean, median, variance, standard deviation, range, IQR, and MAD for the NOX concentrations in January. Examine a boxplot of the data and note that two values are flagged. Remove these values and recalculate the mean, median, variance, standard deviation, range, IQR, and MAD for this data. Compare these results to those calculated using all of the data and comment on your results.

5. Use this [link](#) to access a case study on data analysis and complete the three investigations included in Part III: Ways to Summarize Data.

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