

K12MATHAPSTATS
Statistics Answers to Flexbook Section 1.3

1. The answer is B. When there is an outlier, the mean is pulled toward that value, but the median is not. Therefore, Lucas's height makes the mean of the heights larger than the median of the heights.

2. We let x = the 4th score that Enrique will need in order to have a mean of 93 for the 4 scores.

$$\bar{x} = \frac{\sum x}{n}$$

$$93 = \frac{91 + 87 + 95 + x}{4}$$

$$372 = 273 + x$$

$$x = 99$$

Thus, Enrique needs a score of 99 for the 4th quarter in order to be exempt from the final exam.

3. We first order the data values:

0 0 0 40 55 210 286 357 498 552 1293

3.a. The mode is 0, because the value 0 occurs more often than any other value.

3.b. The median is the middle value, which is 210. There are five data values below 210 and five data values above 210.

3.c. The mean is $\bar{x} = \frac{\sum x}{n} = \frac{3291}{11} \approx 299.18$

3.d. To find Q_1 and Q_3 , we use the ordered data. With an odd number of pieces of data, we ignore the value 210, and then we find the "mini-median" of the left half and the "mini-median" of the right half.



3.e. The mean of 299.18 is higher than the median of 210, because there is an extreme outlier of 1,293. It "pulls" the value of the mean to the right (to be larger). The median is

not affected by the value of the outlier. The value of the outlier could be any value greater than 210, and the median would not change.

4. We must compute a weighted mean for this problem. The mean is NOT 85, because there were more students in section B, which had a high mean, compared to the number of students in section A, which had a lower mean.

$$\bar{x} = \frac{\sum fx}{\sum f} = \frac{(20)(80) + (32)(90)}{52} = \frac{1600 + 2880}{52} \approx 86.15$$