

Chap 4 Review Questions

The Five-Number Summary for the weights (in pounds) of fish caught in a bass tournament is:

Min	Q1	Median	Q3	Max
2.3	2.8	3.0	3.3	4.5

1. Would you expect the mean weight of all fish caught to be higher or lower than the median? Explain.

higher - since the midrange (3.4) is higher than the median, we can expect the mean to do the same.

2. You caught three bass weighing 2.3 pounds, 3.9 pounds, and 4.2 pounds. Were any of your fish outliers? Explain.

acceptable range (fences) = 2.05 - 4.05 lbs.

$$1.5 \times IQR$$

$$1.5 \times 0.5 = 0.75$$

Yes, at least one outlier above 4.05 lbs. since max = 4.5

These boxplots show prices of used cars (in thousands of dollars) advertised for sale at three different car dealers:

3. Which dealer offers the cheapest car, and at what price?

Car Z - \$5,000

4. Which dealer has the lowest median price, and how much is it?

BuyIt - \$10,000

5. Which dealer has the smallest price range, and what is it?

Ace - \$10,000

6. Which dealer's prices have the smallest IQR, and what is it?

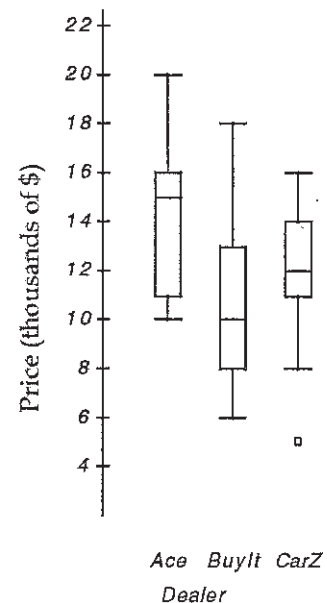
Car Z - \$3,000

7. Which dealer's prices have the largest standard deviation? How do you know?

BuyIt - IQR and range are the largest

8. Which dealer generally sells cars cheapest? Explain.

BuyIt - Q1, med, and Q3 are lowest among all dealers.



On Monday, a class of students took a big test and the highest score was a 92. The next day a student who had been absent made-up the test, scoring a 100. Indicate whether adding that student's score to the rest of the data made each of these summary statistics increase, decrease, or stay about the same.

9. mean

increase

10. median

stay about the same

11. range

increase

12. IQR

stay about the same

13. standard deviation

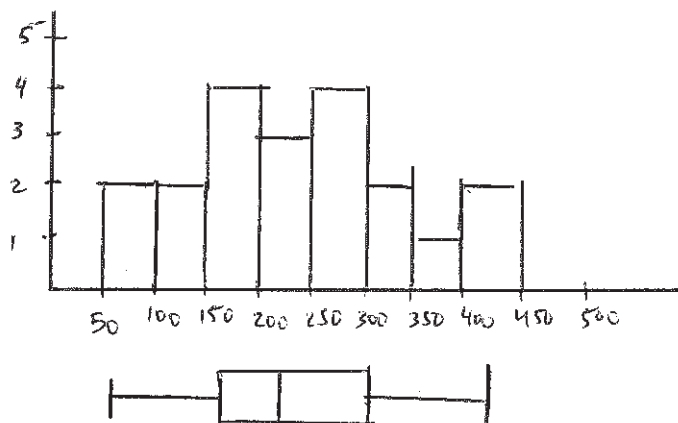
increase

An automobile brake and muffler shop reported the repair bill for their customers yesterday...

88	283	312	290	172	154	400	381	346	181
203	118	143	252	227	56	192	292	213	422

14. Sketch a histogram for these data.

15. Below the histogram, sketch a horizontal boxplot.



16. Find the mean and standard deviation of the repair costs. $\bar{x} = 236.25$, $s = 103.43$

17. Is it appropriate to use the mean and standard deviation to summarize these data? Explain.

Yes, shape of distribution is unimodal and fairly symmetric

18. Describe the distribution of repair costs.

• unimodal, nearly symmetric

• mean = 236.25, med = 220, $s = 103.43$, IQR = 139