

**Warm-Up: Why are these misleading?**

The first chart is a pie chart titled 'What grade were you in?' with a missing slice. The second is a line graph titled 'Sales (in millions) Hourly' with a truncated y-axis. The third is a line graph titled 'Cooper's hawk population soars' with a truncated x-axis.

Mar 28-10:37 AM

**Warm-Up**  
**Consumer Reports** magazine presented the following data on the number of calories in a hot dog for each of 17 brands of meat hot dogs.

73 191 182 190 172 147 146 139  
 175 136 179 153 107 195 135 140 138

Draw a stemplot for the distribution of calories in meat hot dogs & briefly describe the distribution using SOCCS.

*Calories in Hot Dogs*

7	3
8	
9	
10	7
11	
12	
13	5689
14	067
15	3
16	
17	259
18	2
19	015

S - Skewed left  
 O - 73 calories  
 C - calories in hot dogs  
 C - median = 147 calories  
 S - range = 195 - 73 = 122 calories  
 $17 / 5 = 175$  calories

Oct 31-1:35 PM

Hear about the statistician who drowned crossing a river?

It was three feet deep on average.

Sep 15-9:06 AM

- Learning Targets**
- I can find a 5 number summary by hand and on the calculator.
  - I can construct a boxplot.
  - I can use SOCCS to interpret my boxplot.

Jan 27-9:39 AM

**Five Number Summary**

Minimum    1st Quartile    Median    3rd Quartile    Maximum  
 Min         $Q_1$         Med         $Q_3$         Max

Minimum - the smallest number

1st Quartile ( $Q_1$ ) - the number where 25% of the other numbers are below it and 75% are above

Median - the middle number; where 50% of the other numbers are below it and 50% are above

3rd Quartile ( $Q_3$ ) - the number where 75% of the other numbers are below it and 25% are above

Maximum - the largest number

Jan 27-8:20 AM

Ex. Find the 5 number summary

~~27~~ 32 24 23 31 40 32 25 33 38 34  
 23 24 25 27 31 32 32 33 34 38 40

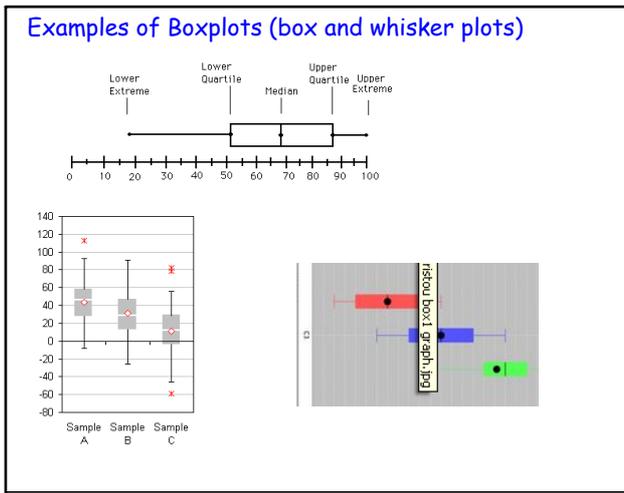
Min = 23         $Q_3$  = 34  
 $Q_1$  = 25        Max = 40  
 Med = 32        { 23, 25, 32, 34, 40 }

Ex. Find the 5 number summary

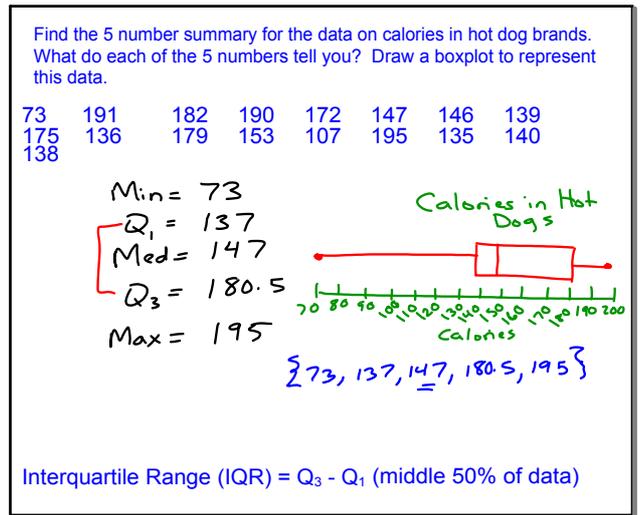
12 10 8 11 11 9 5 13 12 7

Min = 5  
 $Q_1$  = 8  
 Med = 10.5  
 $Q_3$  = 12  
 Max = 13

Jan 27-8:22 AM



Jan 27-8:28 AM



Oct 31-1:53 PM

**Outlier Test**  
 (called the 1.5\*IQR Criterion)

min = 73  
 Q<sub>1</sub> = 137  
 Med = 147  
 Q<sub>3</sub> = 180.5  
 max = 195

Any value that is more than 1.5 times the width of the IQR box is an outlier.

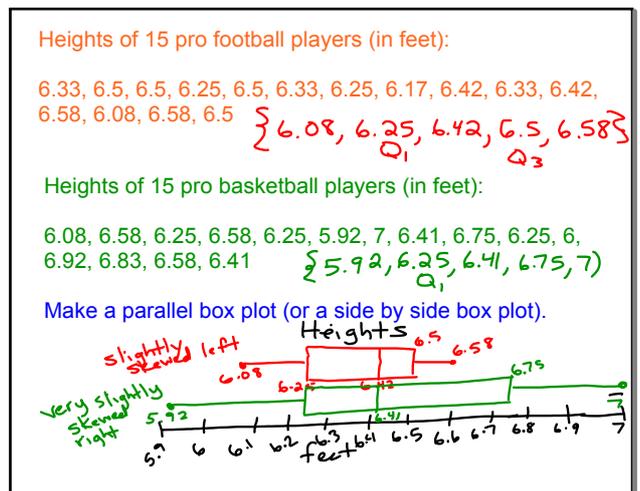
IQR = 180.5 - 137 = 43.5

**Cutoff for LOW OUTLIERS:**  
 $Q_1 - 1.5 \cdot IQR = 137 - 1.5(43.5) = 71.75$   
 any value less than this number is considered a low outlier

**Cutoff for HIGH OUTLIERS:**  
 $Q_3 + 1.5 \cdot IQR = 180.5 + 1.5(43.5) = 245.75$   
 any value greater than this number is considered a high outlier

no outliers

Oct 31-10:35 PM



Jan 25-10:55 PM

Assignment:

Section 5.5 p. 179 #1-3, 6-7

Oct 31-2:24 PM