




Objective: Creating and reading Box-and-whisker plots (with IQR)

Homework ST-2 – NYA p.NY736 #1, 3, 5, 6 – 10, 29, 30

Do Now: Mean, median, and mode: 8, 1, 0, 2, 0, 6, 15, 7, 6

Exam Prep: Which is not a measure of central tendency?

- A) mode B) range C) mean D) median

	<p>Did you say box and whiskers? A jolly tribute to my face and my crapbox... stupendous!</p>
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Quartiles

Three <u>quartiles</u> divide a data set into 4 equal parts.
The median is the middle quartile or 2 nd quartile.
The median of the lower half of data is the <u>lower quartile</u> or <u>1st quartile</u> .
The median of the upper half of data is the <u>upper quartile</u> or <u>3rd quartile</u> .

Four Quartile Situations

8	10 20 30 40 50 60 70 80 ↓ Q1 ↓ Q2 ↓ Q3 25 45 65
7	65 72 76 80 85 94 97 ↑ Q1 ↑ Q2 ↑ Q3 72 80 94
6	2 4 6 8 10 12 ↓ Q1 ↓ Q2 ↓ Q3 4 7 10
5	1 3 5 7 9 ↓ Q1 ↓ Q2 ↓ Q3 2 5 8

The 5-number summary is all the info create a box-and-whisker plot.

Minimum, 1st quartile, median, 3rd quartile, maximum (min, Q1, med, Q3, max).

The interquartile range is the difference between the first and third quartile. It is sometimes used to remove an outlier piece of data.

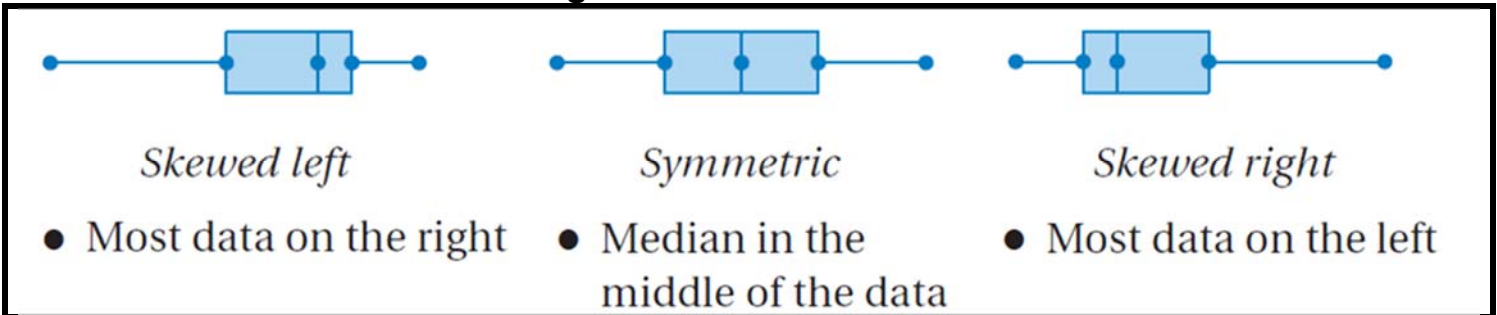
A box-and-whisker plot is a visual way of showing median values for a set of data. It summarizes a set along a number line.

Creating a Box-and-Whisker Plot

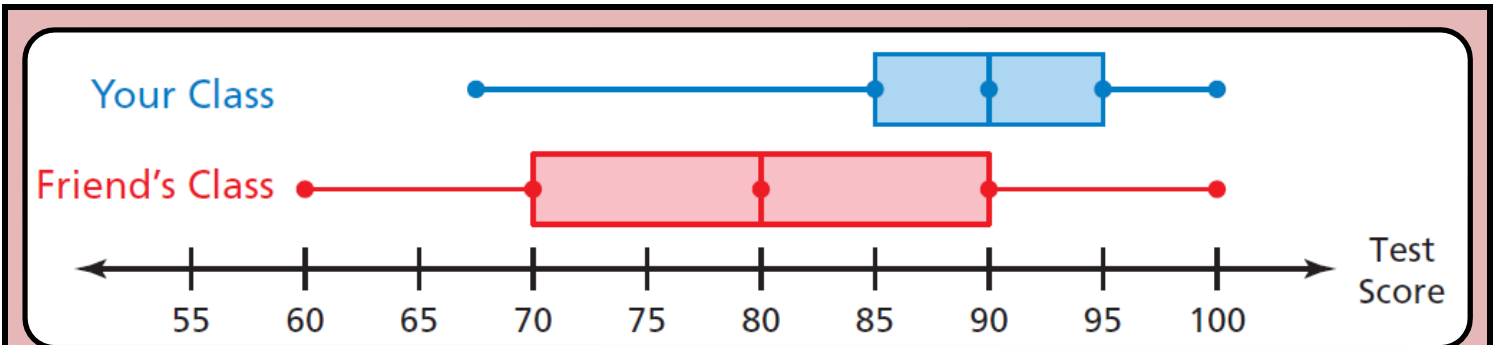
1. Arrange them from least to greatest.	2 2 3 7 8 9 15 16 17 19 25										
2. Find the <u>5 number summary</u> .	<table border="1"> <thead> <tr> <th>min</th> <th>Q1</th> <th>med</th> <th>Q3</th> <th>max</th> </tr> </thead> <tbody> <tr> <td>2</td> <td>3</td> <td>9</td> <td>17</td> <td>25</td> </tr> </tbody> </table>	min	Q1	med	Q3	max	2	3	9	17	25
min	Q1	med	Q3	max							
2	3	9	17	25							
3. Use the range to draw a number line.											
4. Draw a vertical line for each of the values from the 5 number summary.											
5. Draw a "box" connecting Q1, the median, and Q3.											
6. Draw horizontal lines connecting the min to Q1 and Q3 to the max.											
<ul style="list-style-type: none"> - The "box" was added in step 5, and the "whiskers" in step 6. - The box plot can be above or below the number line. 											

Construct Box-and-Whisker Plots	A = {2, 4, 6, 8, 10, 12}	C = {10, 16, 20, 20, 30, 36, 40}
	B = {0, 3, 4, 6, 8, 10, 18}	D = {14, 14, 16, 20, 22, 24, 24, 30, 32}

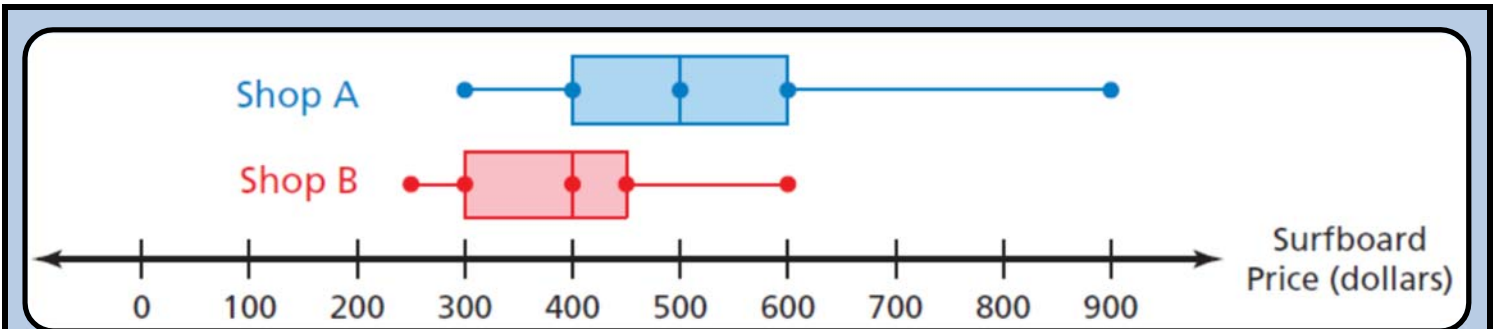
Reading Box and Whisker Plots



Practice



1. What are the “shapes” of the distributions?
2. Which shows data that is more spread out?



1. What are the “shapes” of the distributions?
2. What can you interpret from the data?

Box-and-Whisker on the TI: Enter the data into a List (**STAT** “Edit...”). Go to Stat Plots (**2nd** **Y=**), choose a plot number and highlight the box-and-whisker plot. (**□□□**). Display using “ZoomStat” (**ZOOM** option #9) and **TRACE** for the 5-number summary.