## Ch 2.7 Box Plots or Box and Whisker Diagrams

Outlier-is the value that is located far away from almost all the other values.

Outliers have 3 dramatic effects:
1. Mean
2. Standard deviation
3. The scale of the histogram

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Box plot or box and whisker diagrams- are useful for revealing the center, the spread, and the distribution of the data set along with identifying outliers.

5 Number Summary: 1. Minimum value
2. $Q_1$-median of the bottom half
3. $Q_2$-median of the entire set of data
4. $Q_3$- median of the upper half
5. Maximum value

*For the quartiles don't use the formula.

In a nomral distribution each quartile is equal.

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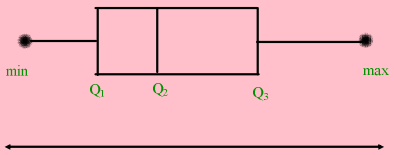
Steps to draw a box plot:
1. Draw a number line to set the scale. (Don't draw on it)
2. Use two points for the Min and Max value
3. Draw 3 vertical lines for the Quartiles
4. Make a box to represent the interquartile rang IQR.
5. Draw the whiskers for the bottom 25th and top 25th percentile scores.




6. Put 5 # summary on the diagram or off to the sides.

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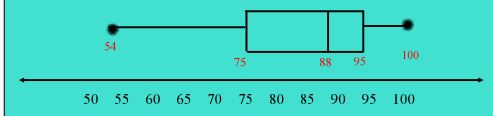
Example 1a) 54, 66, 72, 75, 78, 82, 85, 88, 90, 90, 93, 95, 97, 97, 100




skewed to the left, bottom 25th is about = to the top 75.

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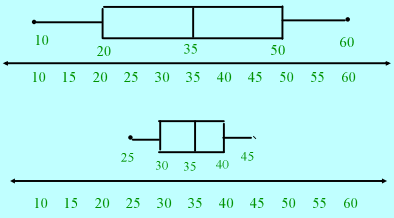
Ex 1b) Draw 2 box plots and compare the sets of data.
Brand A: 10, 20, 30, 40, 50, 60
Brand B: 25, 30, 35, 35, 40, 45

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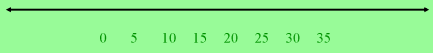
Try: 3, 4, 7, 8, 9, 12, 13, 13, 14, 16, 17, 18, 19, 21, 21, 23, 24, 31, 33, 35

min: $Q_1$: $Q_2$: $Q_3$: max:

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