

Box Plots

The **box plot** (a.k.a. box and whisker diagram) is a standardized way of displaying the distribution of data based on the five number summary: minimum, first quartile, median, third quartile, and maximum.

Remember:

Median: Middle number (when data is in order)

First/Lower Quartile: The median of the lower half

Third/Upper Quartile: The median of the upper half

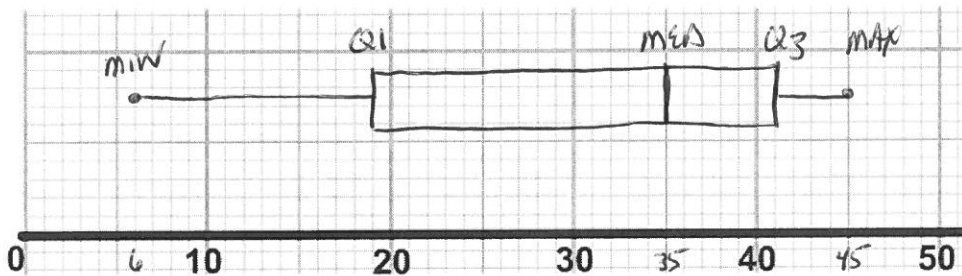
To make a box plot:

The 1st quartile and 3rd quartile make up the outsides of the box. A vertical line in the box represents the median. The whiskers should extend to the minimum and maximum points.

Example 1.

Data points: 6 19 26 35 37 41 45

Median: 35 Lower Quartile: 19 Upper Quartile: 41 Min: 6 Max: 45

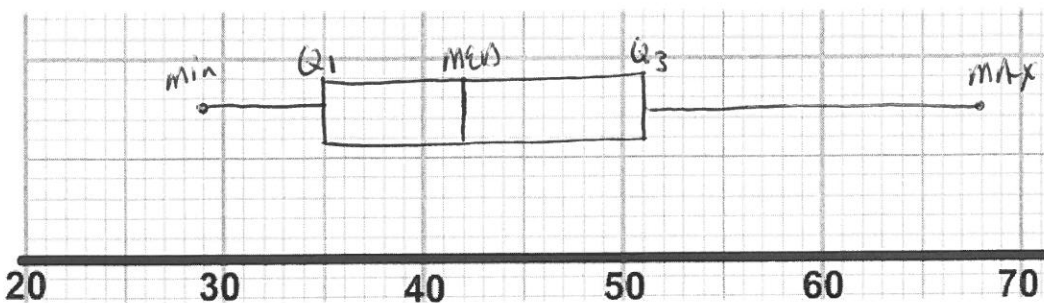


Example 2.

Data points: 44 68 29 38 40 57 34 51 35 49

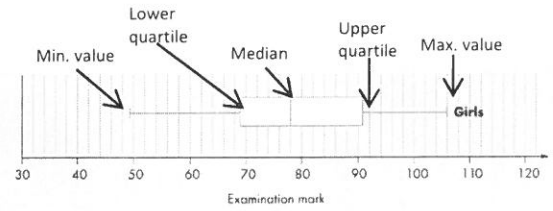
Put in order first: 29 34 35 38 40 44 49 51 57 68

Median: 42 Lower Quartile: 35 Upper Quartile: 51 Min: 29 Max: 68



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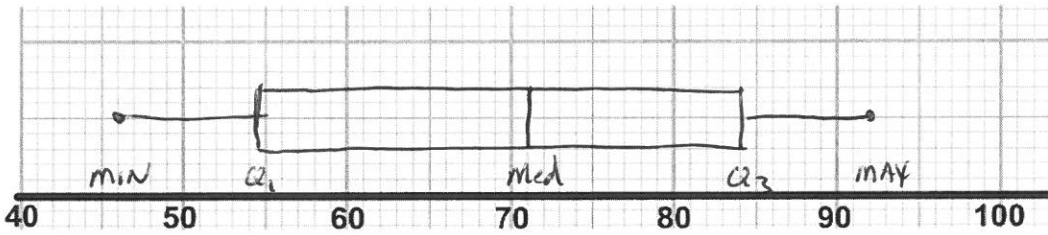
Organize the data, then make a box plot.



1. Data points: 73 77 54 46 69 92 85 50 83 55 87 62

46 50 54 55 62 69 73 77 83 85 87 92

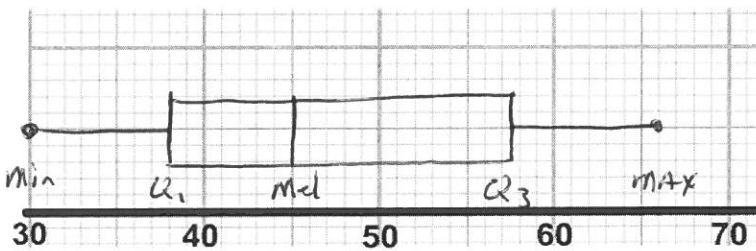
Median: 71 Lower Quartile: 54.5 Upper Quartile: 84 Min: 46 Max: 92



2. Data points: 59 39 49 37 66 30 45 56 41

30 37 39 41 45 49 56 59 66

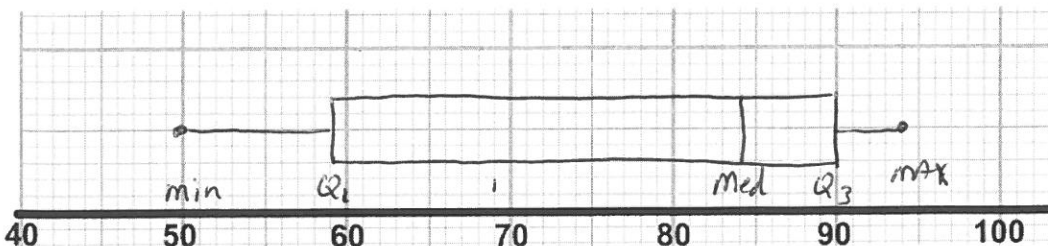
Median: 45 Lower Quartile: 38 Upper Quartile: 57.5 Min: 30 Max: 66



Make a blot plot by entering the data into the graphing calculator.

1. Percentages from a Stats test: 90 59 50 90 84 94 70

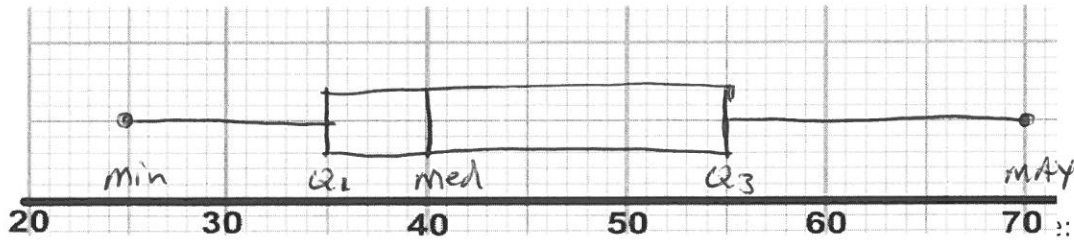
Median: 84 Lower Quartile: 59 Upper Quartile: 90 Min: 50 Max: 94



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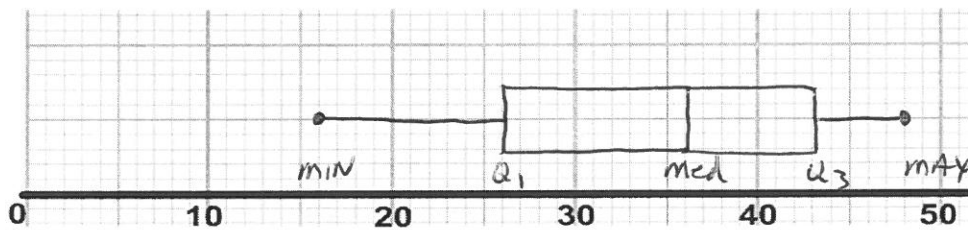
2. Minutes spent on the computer daily: 35 40 50 70 25 35 30 40 55 65

Median: 40 Lower Quartile: 35 Upper Quartile: 55 Min: 25 Max: 70



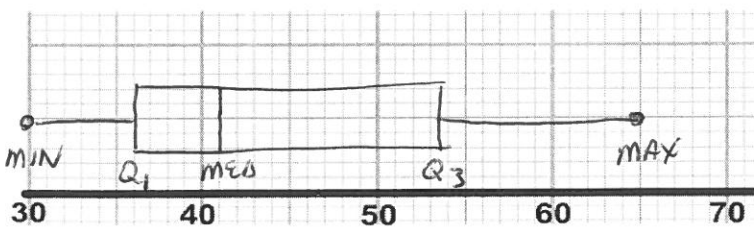
3. Minutes it took to finish their math test: 48 28 45 24 37 38 24 16 35 44 32 42

Median: 36 Lower Quartile: 26 Upper Quartile: 43 Min: 16 Max: 48



4. Time spent studying for science finals: 42 65 36 40 52 55 36 30

Median: 41 Lower Quartile: 36 Upper Quartile: 53.5 Min: 30 Max: 65



5. Weight of boys on a basketball team: 139 145 159 163 165 162 174 132 140 152 164 160 142

Median: 159 Lower Quartile: 141 Upper Quartile: 163.5 Min: 132 Max: 174

