How to Find the Range of a Box Plot: A Simple Guide

Authored by

stats writer

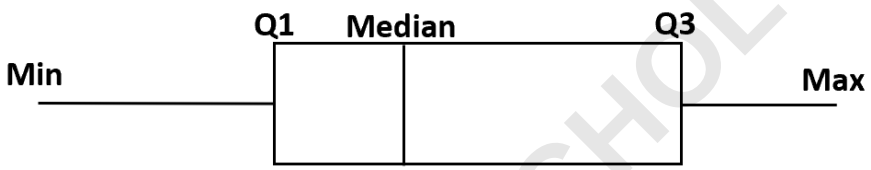
November 30, 2025

The range of a box plot is defined as the difference between the maximum and minimum values within the data set. For example, if the minimum value is 5 and the maximum value is 20, then the range of the box plot would be 15. The box plot visually displays this range by showing the lowest and highest values as the two extreme ends of the box plot, with the middle quartiles representing the remaining values between the two extremes.

A **box plot** is a type of plot that displays the five number summary of a dataset, which includes:

The minimum value
The first quartile (the 25th percentile)
The median value
The third quartile (the 75th percentile)
The maximum value

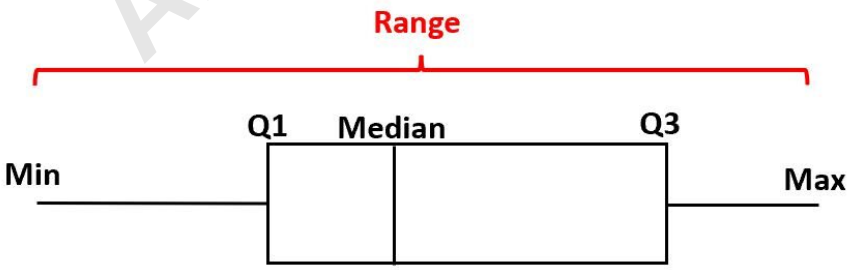
To make a box plot, we draw a box from the first to the third quartile. Then we draw a vertical line at the median. Lastly, we draw "whiskers" from the quartiles to the minimum and maximum value.



The **range** of a box plot is the difference between the maximum and minimum value.

Range = Maximum - Minimum

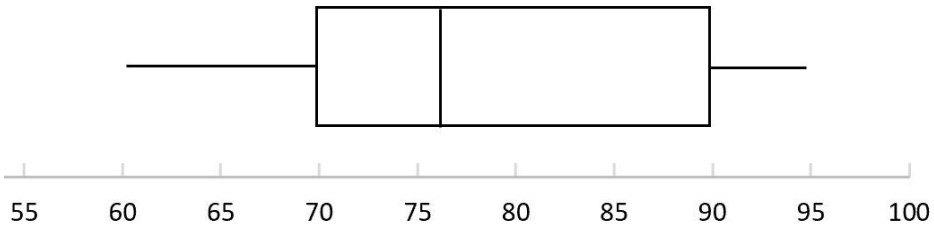
To find the range of a given box plot, we can simply subtract the value located at the lower whisker from the value located at the upper whisker.



The following examples show how to find the range of a box plot in practice.

Example 1: Exam Scores

The following box plot shows the distribution of scores on a certain college exam. What is the range of the exam scores?



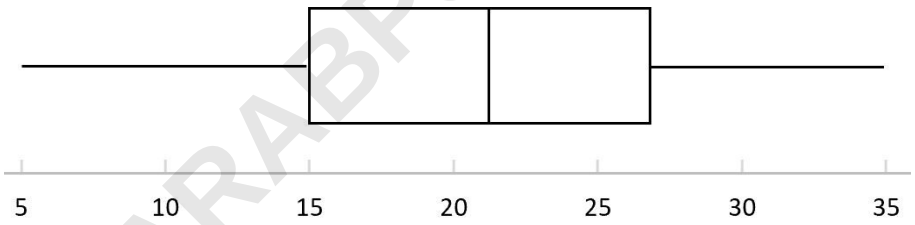
We can find the following values on the box plot to answer this:

Range = Maximum - Minimum
Range = 95 - 60
Range = 35

The range of the exam scores is **35**.

Example 2: Points Scored

The following box plot shows the distribution of points scored by basketball players in a certain league. What is the range of the distribution?



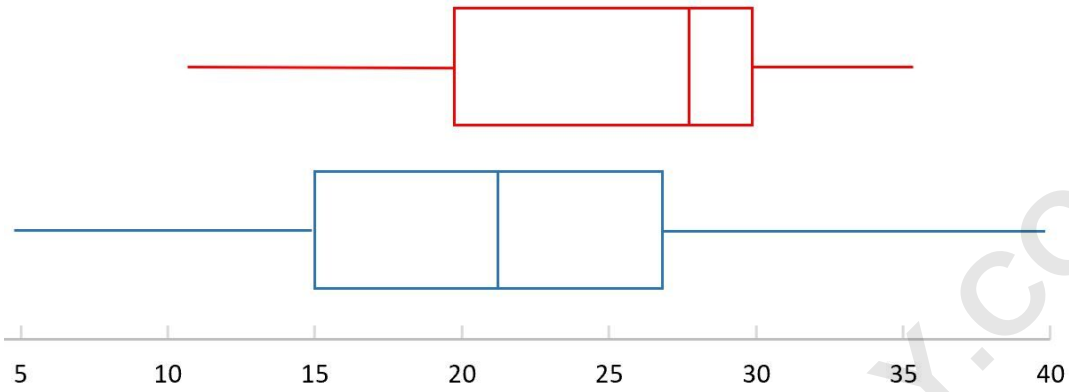
We can find the following values on the box plot to answer this:

Range = Maximum - Minimum
Range = 35 - 5
Range = 30

The range of the distribution is **30**.

Example 3: Comparing Plant Heights

The following box plots show the distribution of heights for two different plant species: Red and Blue. Which distribution has a larger range?



First, let's find the range of the red box plot:

Range = Maximum - Minimum
Range = 35 - 10
Range = 25

Next, let's find the range of the blue box plot:

Range = Maximum - Minimum
Range = 40 - 5
Range = 35

The range for the Blue species is larger.

The following tutorials provide additional information about box plots: