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## What is a math range

Written by January 12, 2023Fact-checked by Paul MazzolaWhat is range?How to find rangeRange examplesUsing range in real lifeIn math, range is a statistical measurement of dispersion, or how much a given data set is stretched out from smallest to largest. In a set of data, the range is the difference between the greatest and smallest value.Range is one of four simple tools of statistics: Mean - The arithmetic mean of a set of numbers divided by the quantity of numb the mathematical difference between the largest and smallest valueThe first three statistical tools are measures of central tendency, or how similar the numbers are, and there is a simple formula to calculate range. What is range in mathGet free estimates from math tutors near you. To find the range in a set of numbers, you must gather your data, organize the data from least to greatest, then subtract the smallest value from the largest value. You can find a range of positive numbers and negative numbers to be studied. Arrange the data set in order from least to greatest. Write a subtraction sentence to subtract the smallest value from the greatest (or largest) value. How to find rangeFor example, if you read a biography, and wrote down how many pages you read each day, you could take the range: Monday - 12 pages Tuesday - 9 pages Wednesday - 11 pages Thursday - 3 pages Friday - 8 pagesTo find the range, put the number of pages in order from least to greatest: Subtract the smallest value from the greatest value from the greatest value. However, you don't need all the other numbers to find the range between two numbers. Finding the range between two numbers is the same as finding the range of a set of data. For example, say you have a data set of just two numbers is 6. Range examples. Let's look at some example problems and figure the range. Below are five of the lowest-scoring games in NBA history, listed with teams and total game pointsFort Wayne Pistons (19) vs. Pittsburgh Ironmen (40) - 89 pointsFort Wayne Pistons (19) vs. Pittsburgh Ironmen (40) - 89 pointsFort Wayne Pistons (19) vs. Pittsburgh Ironmen (40) - 89 pointsFort Wayne Pistons (19) vs. Pittsburgh Ironmen (40) - 89 pointsFort Wayne Pistons (19) vs. Pittsburgh Ironmen (40) - 89 pointsFort Wayne Pistons (19) vs. Pittsburgh Ironmen (40) - 89 pointsFort Wayne Pistons (19) vs. Pittsburgh Ironmen (40) - 89 pointsFort Wayne Pistons (19) vs. Pittsburgh Ironmen (40) - 89 pointsFort Wayne Pistons (19) vs. Pittsburgh Ironmen (40) - 89 pointsFort Wayne Pistons (19) vs. Pittsburgh Ironmen (40) - 89 pointsFort Wayne Pistons (19) vs. Pittsburgh Ironmen (40) - 89 pointsFort Wayne Pistons (19) vs. Pittsburgh Ironmen (40) - 89 pointsFort Wayne Pistons (19) vs. Pittsburgh Ironmen (40) - 89 pointsFort Wayne Pistons (19) vs. Pittsburgh Ironmen (40) - 89 pointsFort Wayne Pistons (19) vs. Pittsburgh Ironmen (40) - 89 pointsFort Wayne Pistons (19) vs. Pittsburgh Ironmen (40) - 89 pointsFort Wayne Pistons (19) vs. Pittsburgh Ironmen (40) - 89 pointsFort Wayne Pistons (19) vs. Pittsburgh Ironmen (40) - 89 pointsFort Wayne Pistons (19) vs. Pittsburgh Ironmen (40) - 89 pointsFort Wayne Pistons (19) vs. Pittsburgh Ironmen (40) - 89 pointsFort Wayne Pistons (19) vs. Pittsburgh Ironmen (40) - 89 pointsFort Wayne Pistons (19) vs. Pittsburgh Ironmen (40) - 89 pointsFort Wayne Pistons (19) vs. Pittsburgh Ironmen (40) - 89 pointsFort Wayne Pistons (19) vs. Pittsburgh Ironmen (40) - 89 pointsFort Wayne Pistons (19) vs. Pittsburgh Ironmen (40) - 89 pointsFort Wayne Pistons (19) vs. Pittsburgh Ironmen (40) - 89 pointsFort Wayne Pistons (19) vs. Pittsburgh Ironmen (40) - 89 pointsFort Wayne Pistons (19) vs. Pittsburgh Ironmen (40) - 89 pointsFort Wayne Pistons (19) vs. Pittsburgh Ironmen (40) - 89 pointsFort Wayne Pistons (19) vs. Pittsburgh Ironmen (40) - 89 pointsFort W Celtics (46) vs. Pittsburgh Ironmen (44) - 90 pointsBoston Celtics (38) - 85 pointsGo through the three steps to find the range of these five games: Step 1: Gather your data points, so you know all the numbers to be studiedStep 2: Arrange the data set in order from least to highest numberStep 3: Subtract the smallest value from the highest value to get your rangeThe range of the five lowest-scoring games in NBA history is 53 points!Let's try this with some more challenging numbers, like country populations. China has an estimated population of 1,420,062,022 people. Mexico's population is 132,328,035. India has a population of 1,368,737,513. The United States has a population of 329,093,110. What is the range of this data set?To get our answer we gather the data and arrange the data in order from least to greatest: 132,328,035329,093,1001,368,737,5131,420,062,022Then, subtract the smallest value from the greatest real life to make mathematical calculations. Range can be used to calculate the amount of time that has passed, like when calculating your age. The current year is 2020, and you were born in 2005. How old are you? Or how much time has passed? 15 years have passed, so if your 2020 birthday has already passed, then you are 15 years old. Range is also used in real life to figure out the dispersion of a high school class' test scores, to determine the price range for a service, and much more. The Range is the difference between the lowest values. Example: In {4, 6, 9, 3, 7} the lowest value is 3, and the highest is 9. So the range is 9 - 3 = 6. It is that simple! But perhaps too simple ... The Range Can Be Misleading The range is 3616, So the range is 3616 - 5 = 3611. The single value of 3616 makes the range large, but most values are around 10. So we may be better off using Interquartile Range or Standard Deviation. Range of a Function Range can also mean all the output values of a function, see Domain, Range and Codomain. 696, 740, 1468, 1469, 2159, 2160, 3064, 3065, 3798, 3799 Copyright © 2025 Rod Pierce The mean, the median and the mode are three different measures of average which we can use. The range is a measure of how spread out data is. The Mode The mode is the value that appears most often. The Median The median is the middle numbers are in order). The Mean To calculate the mean add up all the numbers and then divide by how many numbers there are. The Range The range is the difference between the biggest number and the smallest number. Example 1: Here are a list of 7 numbers: 7 4 7 9 5 1 2Find:a) The medianc) The medianc) The medianc) The median is the middle number (but only when the numbers are in order) We have to put the numbers in order: 1 2 4 5 7 7 9 We can now find the middle number: The median is 5 c) To find the mean we need to add up all the numbers there are: 1 + 2 + 4 + 5 + 7 + 7 + 9/7 = 35/7 = 5 The mean is 5 d) To find the range we take the smallest number away from the biggest number -1 = 8 The range is 8 Example 2: Here are a list of 8 numbers: 6 6 13 5 11 11 11 9 Find:a) The medianc) The meand) The medianc) The meand) The medianc) The medianc) The medianc) The mediance is the mode is the mode is 11 b) To find the median (the middle number) we need to put the numbers in order: 5 6 6 9 11 11 11 We can see that there is not one middle number, we have 9 and 11 in the middle. When this happens the median is half way between the two middle numbers, the middle of 9 and 11 is 10. We can work this out by adding 9 and 11 and then dividing by 2. 9 + 11/2 = 10 The median is 10 c) To find the mean we need to add up all the numbers then divide by how many numbers there are: 5 + 6 + 6 + 9 + 11 + 11 + 13/8 = 72/8 = 9 The mean is 9 d) To find the range we take the smallest number 13 - 5 = 8 The range is 8 Try these: Calculate the mode, the mean is 9 d) To find the range we take the smallest number 13 - 5 = 8 The range is 8 Try these: Calculate the mode, the mean and the range is 8 Try these: Calculate the mode, the mean and the range is 8 Try these: Calculate the mode, the mean and the range is 8 Try these: Calculate the mode, the mean and the range is 8 Try these: Calculate the mode, the mean and the range is 8 Try these: Calculate the mode, the mean and the range is 8 Try these: Calculate the mode, the mean and the range is 8 Try these: Calculate the mode, the mean and the range is 8 Try these: Calculate the mode, the mean and the range is 8 Try these: Calculate the mode, the mean and the range is 8 Try these: Calculate the mode, the mean and the range is 8 Try these: Calculate the mode, the mean and the range is 8 Try these: Calculate the mode, the mean and the range is 8 Try these: Calculate the mode, the mean and the range is 8 Try these: Calculate the mode, the mean and the range is 8 Try these: Calculate the mode, the mean and the range is 8 Try these: Calculate the mode, the mean and the range is 8 Try these: Calculate the mode, the mean and the range is 8 Try these: Calculate the mode, the mean and the range is 8 Try these: Calculate the mode, the mean and the range is 8 Try these: Calculate the mode, the mean and the range is 8 Try these: Calculate the mode, the mean and the range is 8 Try these: Calculate the mode, the mean and the range is 8 Try these: Calculate the mode, the mean and the range is 8 Try these: Calculate the mode, the mean and the range is 8 Try these i mathematics, understanding how data is spread out is essential for making informed decisions. One fundamental measure of data dispersion is the range represents the difference between the highest and lowest values in a dataset. This simple yet powerful concept is widely used in statistics, business analytics, and everyday problem-solving. In this article, we'll break down the concept of range, provide real-world examples, and explain how you can apply it effectively. The range in mathematics refers to the difference between the maximum and minimum values in a set of numbers. It provides a quick way to understand the spread of data. The formula to calculate the range is: For example, if you have the numbers 3, 7, 12, 5, and 9, the range of 9, indicating how spread out the numbers are. The range helps in various applications, including: Understanding Data Spread - It provides insight into how widely values vary in a dataset. Comparing Variability - When analyzing different datasets, the range can indicate which one has greater variability. Identifying Outliers - A very large range might suggest the presence of extreme values that could distort the analysis. Imagine you are analyzing the temperature variability. temperature recorded is 95°F and the lowest is 60°F, then: This tells you that the temperature fluctuated by 35°F during the week. A teacher wants to assess the variability of student scores in a math test. If the highest score is 98 and the lowest is 65, the range is: This means the difference between the top-performing and lowest-performing student is 33 points. A stock market analyst examines the daily closing prices of a stock for a week. If the highest price was \$150 and the lowest was \$120, then: This range of \$30 indicates how much the stock price fluctuated over the week. While the range is a useful measure of dispersion, it has limitations: Sensitive to Outliers - A single extreme value can significantly affect the range. Doesn't Show Data Distribution - The range only tells you the spread, not how the data points are distributed. Ignores Middle Values - Unlike measures like the standard deviation, the range doesn't account for values between the minimum and maximum. For a more comprehensive analysis, it's often useful to pair the range with other statistical measures like variance or interquartile range (IQR). To make the best use of the range in data analysis, consider these tips: Use the range to get a quick understanding of variability in a dataset. Compare ranges between multiple datasets to determine which one is more spread out. If the range is too large, investigate for possible outliers that could be distorting results. Complement range with other statistical tools to get a more detailed picture of data distribution. Understanding what is the range in math can help you analyze data effectively in various real-world scenarios, from tracking temperatures to evaluating stock prices. While it's a simple concept, knowing its applications, limitations, and best practices can enhance your data analysis skills. Do you use the range in your work or studies? Let us know in the comments below! Also, don't forget to subscribe to our newsletter for more insightful math and data analysis tips. You have two different ways to define range in math. If you're doing statistics, the "range" usually means the difference between the highest value and lowest value in a set of data. If you're doing algebra or calculus, the "range of a set of possible results, or output values, of a function. If you're asked to find the range in statistics, you're simply being asked to find the largest number and smallest number in your data set, and then find the difference, "it's a clue that you're about to subtract. The range formula is as follows: \(\text{highest value} - \text{ lowest value} = \text{ range}) Don't forget to include any units (feet, inches, pounds, gallons, etc.) that may be appended to your data set. Imagine that you snuck a peek at your teacher's notebook, and you saw that so far, the students' grade percentages in class are {95, 87, 62, 72, 98, 91, 66, 75}. Curly brackets are often used to enclose a set of numbers, so you know everything inside the curly brackets belongs together. What's the range of this data set or, to put it another way, the range of the students' grades? First, identify the highest data point (98) and the lowest data point (62). Next, subtract the smallest value from the largest value: \(98 - 62 = 36\) So the range of this particular data set is 36 percentage points. When you begin studying functions in mathematics, you'll run into a second definition of range. To understand range, it helps to think of functions as little math machines. The set of values you can put into the math machine are called the domain (another very important concept). The set of possible results, once you crank those values through the math machine, is called the codomain And the set of actual results or outputs you get is called the range. There are a couple of important relationships between range and domain that you need to understand. First, within domain and ranges of real number, each value in the range, you might have a relationship between the two sets of data, but it's not technically classified as a classical function's range. This rule of one to one correspondence only applies to what are called injective functions in mathematics. There are many other types of functions that use different domain and range relationships (and even imaginary numbers). One of the best ways to make sense of this is to imagine your very own math class. The students in the class represent the domain (or the information that goes into the function), while the class itself is the function or "math machine." Your final grades represent the range, or what you get after cranking the elements of the domain (students) through the function (math class). When you look at that example, you can intuitively see that each student is going to receive only one final grade once class is over. Each value in the range. However, it is possible to not a student is going to receive only one final grade once class is over. for more than one student to get the same grade. For example, there might be two or three students in your class that studied very hard and managed to get a 96 percent as their final grade. Multiple values in the domain can correspond to a single value in the range. -2, -1, 1, 2, 3, 4}. What's the range of this function? Although you'll learn more advanced ways of finding the range of this function to each element of the domain, and track your results. In other words, insert each element of the domain, one at a time, a x in the function x^2. This gives you a set of results: \(\{9, 4, 1, 1, 4, 9, 16\}\) But as you can see, some element in the range. But you don't want to write down the repeated elements when you give the range. So, your answer is simply: \(\{1, 4, 9, 16\}\) Notice how the positive numbers and negative numbers in the domain play different roles in the range (in terms of which domain values correspond to the highest numbers). These relationships are often unique to a function. Maloney, Lisa. "What Is Range In Mathematics?" sciencing.com, . 12 February 2023. APA Maloney, Lisa. (2023, February 12). What Is Range In Mathematics? last modified February 12, 2023. Here we will learn about the range in maths, including what the range is and how to calculate it. We will also learn how to solve problems involving the range. There are also range worksheets based on Edexcel, AQA and OCR exam questions, along with further guidance on where to go next if you're still stuck. The range we find the difference between the highest value and the lowest value. (The highest value is sometimes called the largest number). \text{Range}=\text{lowest value is sometimes called the largest value or smallest value or smallest value or largest value or largest value or smallest value is sometimes called the largest value or largest value or largest value or smallest value or largest value or larg \quad \quad 13 \text{Range}=\text{highest value}-\text{lowest value}=13-5=8 The range is a type of statistic. Other statistics include the mean, the median and the mode. Each statistic allows us to analyse the data set, looking at: the spread of the data (the range), the location of the median), the average value (the mean), and the most common value (the mode). When we find the average for a set of data, we are referring to the mean average. In order to calculate the range: Identify the lowest value. Subtract the lowest value. Get your free range maths worksheet of 20+ mean, median, mode and range guestions and answers. Includes reasoning and applied questions. DOWNLOAD FREE x Get your free range maths worksheet of 20+ mean, median, mode and range questions. DOWNLOAD FREE Range is part of our series of lessons to support revision on mean, median, mode. You may find it helpful to start with the main mean, median, mode lesson for a summary of what to expect, or use the step by step guides below for further detail on individual topics. Other lessons in this series include: Mean, median, mode or modal Work out the range of this set of numbers 3 \quad \quad 4 \quad \quad 10 \quad \quad 12 \quad \quad 15 Identify the highest value. Look through the set of values and find the highest value (or highest value). The highest value is 3. 3Subtract the lowest value from the highest value. The range is the difference between the highest and lowest values. \text{Range}=\text{highest value}. \text{Range}=\text{highest value}. Look through the set of values and find the highest value (or highest value). The highest value is 18. Identify the lowest value. Look through the set of values and find the lowest value (or lowest value)-text{lowest value is 1. Subtract the lowest value is 1. Subtract th order to use the range with problem solving: Write down how to find the range. Substitute the values we are given. Work out the missing value. The range of a set of data is 12. The lowest value is 25. Work out the highest value is 25. Work out given. 25=\text{highest value}-12 Work out the missing value. To find the highest value we will need to add the range to the lowest value. \text{Highest value}=37.12=25 \; \color{green} < The range of a set of data is 14. The lowest value is 38. Work out the highest value. Write down how to find the range to the lowest value. \text{Highest value}=38+14=52 The highest value is 52. This answer can be doubled checked: \text{Range}=\text{highest value}-\text{lowest value} Substitute the values we are given. Work out the missing value. To find the lowest value is 6. This answer can be doubled checked: \text{lowest value}=14-8=6 The lowest value}=14-8=6 The lowest value}=14-8=6 The lowest value} / The range of a set of data is 17. The highest value is 28. Work out the lowest value. Write down how to find the range {\text{Range}=\text{lowest value} Substitute the value we will need to subtract the range from the highest value} = 28-17=11 The lowest value is 11. This answer can be doubled checked: \text{Range}=\text{highest value}. Remember to calculate the range Writing the range as lowest number to calculate the range as lowest number to calculate the range. X and highest values. Remember to calculate the range as lowest number to calculate the range as lowest number to calculate the range. highest number with a dash in between is incorrect. To calculate the range of this set of values? 1 \quad \quad 6 \quad \quad 6 \quad \quad 8 The range is not 1-8 or 1- to -8 The range is calculated by finding the difference between the highest and lowest values.  $text{Range}=\text{highest value}=11-3=8$  The range is calculated by finding the difference between the highest value}=11-3=8 The range is calculated by finding the difference between the highest value}=11-3=8 The range is calculated by finding the difference between the highest value}=11-3=8 The range is calculated by finding the difference between the highest value}=11-3=8 The range is calculated by finding the difference between the highest value}=11-3=8 The range is calculated by finding the difference between the highest value}=11-3=8 The range is calculated by finding the difference between the highest value}=11-3=8 The range is calculated by finding the difference between the highest value}=11-3=8 The range is calculated by finding the difference between the highest value}=11-3=8 The range is calculated by finding the difference between the highest value}=11-3=8 The range is calculated by finding the difference between the highest value}=11-3=8 The range is calculated by finding the difference between the highest value}=11-3=8 The hi  $value + text{Range} = 5+6=11$  The highest value is found by subtracting the range on to the lowest value } + text{Range} = 14+17=31 The highest value is found by subtracting the range from the highest value } + text{Range} = 14+17=31 The highest value is found by subtracting the range from the highest value } + text{Range} = 14+17=31 The highest value is found by subtracting the range from the highest value } + text{Range} = 14+17=31 subtracting the range from the highest value. \text{Lowest value}=\text{highest value}-\text{Range}=34-16=18 1. Here is a list of numbers in the list. (2 marks) \text{Range}=\text{highest value}-\text{lowest value}-\text{value}-\text{value}-\text{value}-\text{value}-\text{value}-\text{value}-\text{value}-\text{value}-\text{value}-\text{value}-\text{value}-\text{value}-\text{value}-\text{value}-\text{value}-\text{value}-\te value}=28-9 (1) \text{Range}=19 (1) 2. Here is a list of numbers. 12 \quad \quad 13 \quad numbers is 23. The range of these four numbers is 17. Find the lowest of these four numbers. (2 marks) \text{Lowest value}=6 (1) You have now learned how to: Work out the rangeSolve problems involving the range Representing data Frequency table Prepare your KS4 students for maths GCSEs success with Third Space Learning. Weekly online one to one GCSE maths revision lessons delivered by expert maths tutors. Find out more about our GCSE maths revision lessons delivered by expert maths tutors. we use cookies and how to manage or change your cookie settings. AcceptPrivacy & Cookies Policy The range of a data set is the difference between the greatest value and lowest statistics used to analyze data and make useful interpretations. What can you tell from the variability of the data or how the data? It tells us the variability of the data or how the data or how the data or how the data or how the data? It tells us the variability of the data or how t range in math can be given as the difference between the maximum value and minimum value within the set. Range is the simplest and quickest way to make sense of the given data points. Example: What is the range of numbers \$\left\{23,\; 27,\; 40,\; 18,\; 25\right\} ? The largest value \$= 34\$ The set. Range is \$34 \;-\; 13 = 21\$. It tells us how far the greatest value of the set is from the smallest number. A wider range signifies substantial variability, whereas a narrower range of a set of numbers is the difference between the highest observation and the lowest observation in the given data. The formula to find the range in math can be given as: Range = Highest value - Lowest value from the highest value from the lowest value from the lowest value from the lowest value from the lowest value as it, you can use the following steps. Step 1: Write the given numbers in the ascending order (from the lowest value from the lowest to the highest). Step 2: Note down the lowest and the highest values. Step 3: Subtract the lowest value from the highest value from the h LOWEST21272936394257 HIGHEST Subtract the lowest value from the highest. Range \$= 57 \;-\; 13 = 44\$ If the data consists of only two numbers, then the smaller number and the smaller number and the smaller number. Example: The range of the set \$\left\{8,\; 12\right\}\$ is \$12 \;-\; 8 = 4\$. Let's understand what kind of interpretations we can make to compare given data sets based on the range. Example: The data recorded for the number of visitors for two museums in the recent week is given by Museum A: 24, 26, 29, 29, 33, 34, 36 Museum B: 16, 24, 26, 26, 26, 27, 28 Range of the number of visitors for the museum \$A = 36 \;-\; 24 = 12\$ Range of the number of visitors for two museums in the recent week is given by Museum A: 24, 26, 29, 29, 33, 34, 36 Museum B: 16, 24, 26, 26, 27, 28 Range of the number of visitors for two museums in the recent week is given by Museum A: 24, 26, 29, 29, 33, 34, 36 Museum B: 16, 24, 26, 26, 26, 27, 28 Range of the number of visitors for two museums in the recent week is given by Museum B: 16, 24, 26, 26, 26, 27, 28 Range of the number of visitors for two museums in the recent week is given by Museum A: 24, 26, 29, 29, 33, 34, 36 Museum B: 16, 24, 26, 26, 27, 28 Range of the number of visitors for two museums in the recent week is given by Museum A: 24, 26, 29, 29, 33, 34, 36 Museum B: 16, 24, 26, 26, 27, 28 Range of the number of visitors for two museums in the recent week is given by Museum A: 24, 26, 29, 29, 33, 34, 36 Museum B: 16, 24, 26, 26, 27, 28 Range of the number of visitors for two museums in the recent week is given by Museum A: 24, 26, 29, 29, 33, 34, 36 Museum B: 16, 24, 26, 29, 29, 33, 34, 36 Museum B: 16, 24, 26, 29, 29, 33, 34, 36 Museum B: 16, 24, 26, 29, 29, 33, 34, 36 Museum B: 16, 24, 26, 29, 29, 33, 34, 36 Museum B: 16, 24, 26, 29, 29, 33, 34, 36 Museum B: 16, 24, 26, 29, 29, 33, 34, 36 Museum B: 16, 24, 26, 29, 29, 33, 34, 36 Museum B: 16, 24, 26, 29, 29, 33, 34, 36 Museum B: 16, 24, 26, 29, 29, 33, 34, 36 Museum B: 16, 24, 26, 29, 29, 33, 34, 36 Museum B: 16, 24, 26, 29, 29, 33, 34, 36 Museum B: 16, 24, 26, 29, 29, 33, 34, 36 Museum B: 16, 24, 26, 29, 29, 33, 34, 36 Museum B: 16, 24, 26, 29, 29, 33, 34, 36 Museum B: 16, 24, 26, 29, 29, 34, 36 Museum B: 16, 24, 26, 29, 29, 36 Museum B: 16, 24, 26, 29, 29, 36 Museum B: 16, 24, 24, 26, 29, 29, 36 Museum B: 16, 24, 24, 26, 29, 2 visitors for the museum \$B = 28 \;-\; 16 = 12\$ What is the best interpretation of range here? It shows how far apart the lowest number of visitors are. Also, we can say that the number of visitors are. Also, we can say that the number of visitors are. plot of the data set is given. Example: A bar graph of the average monthly temperature (in degree celsius) for a particular city is given below. Highest temperature is recorded in July, which is \$12^\circ\;C\$. Lowest temperature is recorded in July, which is \$12^\circ\;C\$. Range \$= 30^\circ\;C\$. Range \$= 30^\circ\;C\$. The range is used to instantly analyze broadly how the data is spread or to get an instant idea about the variability of the data. Range is the easiest way to make interpretations about the spread of the data. Range is the easiest way to make interpretations about the spread of the data. sometimes misleading, since it gets significantly affected by the outliers or fluctuations in the data. Extreme values have an impact on the range of \$3,\; 5,\; 7,\; 9,\; 3= 347\$ Here, almost all values are less than 10, but the range is large due to the outlier 350. 2) Range is calculated only by two points in the data set. You cannot know how many data points are there or how all the range of a function. The range of the function y = f(x) is the set of all the possible output values. Example: For the function f(x) = x + 1 defined over the set  $\left(-1, \frac{0}{2}, \frac{1}{2}\right)$ . The graph of a function can be used to identify the range of a function. The y-axis of a graph represents the potential output values. If the graph goes on beyond the portion or region of the paper, the range is greater than the visible values. In the image given below, there are two graphs. 1) The graph on the left ranges from 0 and above. The lowest output value is 0. The highest output value cannot be determined since the graph goes on forever. Thus, the range is [0, ). Square bracket indicates that 0 is included in the range of a constant function f(x) = c is given by the set  $|\left[-4,\right]$ ; 4/right]. The lowest y-value is -4 to +4. the range, its formula, comparing data sets using the range along with its merits and limitations. Let's solve a few examples and practice problems! 1. On his summer vacation, Alex traveled through 8 different states. He recorded the cost of a water bottle in each state. What is the range? \$\\$2.79,\; \\$1.61,\; \\$2.96,\; \\$3.73,\; 23\right\}\$ Data rearranged in ascending order is given by 8, 12, 15, 17, 21, 23 Lowest data value \$= 23\$ Range \$= 15\$ Hence, the range of the given data set \$= 15\$ Hence, the range of the set of natural numbers less than 15? Solution: Natural numbers 18 Range \$=\$ Largest value \$-\$ Smallest value \$-\$ Smallest value \$+\$ Smallest value - Smallest value \$+\$ Sma aboveLowest value = 2 Highest value = 2 Range =data into four equal parts or quarters. The first, second, and third quartile is represented by \$Q 1,\; Q 2\$, and \$Q 3\$ respectively. What is the difference between the upper quartile second, and third quartile second, and third quartile second, and the lower quartile second are gravital as the difference between mean and range? Mean is the average of all the numbers in the given data. It is the best way to analyze the central tendency of the data. It only uses two points. Range is the difference between the largest number. It gives a broad idea about the spread of the data. It only uses two points.