Mathematical reviews pdf

In mathematics and statistics, average refers to the sum of a group of values divided by n, where n is the number of values in a group. The diameter is also known as the average. Like the median and mode, the average is a measure of the central tendency, which means that it reflects a typical value in a given set. Averages are used quite regularly to determine the final degrees during the period or semester. Averages are also used as performance measures. For example, batting averages express how often a baseball player hits when they are up to bat. The gas mileage expresses how far the vehicle will usually travel on a gallon of fuel. In its most common sense, the average refers to what is considered normal or typical. The mathematical average is calculated by summing the group of values and subdividing it by the number of values in the group. It is also known as the arithmetic mean. (Other means, such as geometrical and harmonic means, are calculated using the product and reciprocal values rather than the sum.) With a small set of values, calculating the average takes only a few simple steps. Imagine, for example, that we want to find an average age among a group of five people. They are 12, 22, 24, 27 and 35 years old. First we add these values to find their sum: 12 + 22 + 24 + 27 + 35 = 120 Then we take this amount and divide it by the number of values (5): The result is 24 years average age of five individuals. Average, or average, is not the only measure of central tendency, although it is one of the most common. Other common measures are median and regimen. The median is the mean in a given set or a value that separates the greater half from the bottom half. In the above example, the median age among five individuals is 24, a value that falls between the higher half (27, 35) and the lower half (12, 22). For this dataset, the median and average are the same, but this is not always the case. For example, if the youngest individual in the group were 7 instead of 12 years old, the average age would be 23 years. However, the median would still be 24. For statisticians, the median can be a very useful measure, especially if the dataset contains values or values that differ significantly from other values in the set. In the example above, all individuals are under 25 years apart. But what if it wasn't? What if the oldest person is 85 instead of 35? This extreme would bring the average age up to 34 years, which is a value higher than 80 percent of the values in the set. As an outlier, the mathematical average is no longer a good representation of ages in the group. A median of 24 is a much better benchmark. Mode is the most common value in a dataset or dataset that most likely appears in a statistical sample. In the example above, there is no mode because each individual value is unique. However, in a larger sample of people, there would probably be more individuals age, and the most common age would be the regimen. On a normal average, each value in a given dataset is treated in the same way. In other words, each value contributes the same as the others to the final average. However, on a weighted average, some values have a greater impact on the final average than others. For example, imagine a stock portfolio consisting of three different shares: Shares A, Stock B and Stock C. Over the past year, the value of A shares has risen by 10 per cent, the value of B shares has risen by 15 per cent and the value of C shares has risen by 25 per cent. We can calculate the average percentage growth by summing these values and dividing them by three values. But it would only tell us the overall growth of the portfolio if the owner held the same amount of shares A, Stock B, and Stock C. Most portfolios, of course, contain a combination of different stocks, some of which make up a larger percentage of the portfolio than others. Therefore, in order to find the overall growth of the portfolio, we need to calculate a weighted average based on how much of each share is held in the portfolio. For example, we will say that A shares make up 20 per cent of the portfolio, B shares make up 10 per cent and Shares C make up 70 per cent. We value each growth value by multiplying its portfolio percentage: Shares A = 10 per cent growth x 20 per cent portfolio = 200Stock B = 15 per cent growth x 10 per cent portfolio = 150Stock C = 25 per cent growth x 70 per cent portfolio = 1750 Then add these weighted values and divide them by sum of the portfolio percentages : (200 + 150 + 1750) ÷ (20 + 10 + 70) = 21 Result, 21 percent, represents the overall growth of the portfolio. Note that it is higher than the average of the three growth values alone-16.67-which makes sense given that the most competitive shares also make up the lion's share of the portfolio. Although economics is technically social science, students pursue this area to gain a solid foundation in math. Determining how resources are allocated requires a mathematical understanding of how to calculate these resources, the costs of allocation and evaluation of other quantitative measures. This means that the field of economics is riddled with mathematical equations and applications. The types of mathematics used in economics are primarily algebra, calculus and statistics. Algebra is used to calculate how total costs and total revenue are. Calculus is used to find derivatives of utility curves, profit maximisation curves and growth models. Statistics allow economists to make forecasts and determine the probability of occurrence. Therefore, many students take at least a year of calculus, statistics and prediction courses called econometry in pursuit of a bachelor's degree in economics. Economists are hired to determine the risk or likely outcome of an event. Such as you want to know what the risks of dying from surgery are and whether the benefits are worth it. National Institutes of Health explains the relationship between pressure on litigation and C-section and VDC rates. Because of the increased risk of litigation, some states ban vaginal birth after C-sections, or VBACs. The policy was likely made after an economist assessed the statistical risk to the mother and weighed it up depending on the cost of the lawsuit over malpractice based on that figure. This decision is therefore economic. Economists working for pharmaceutical companies make similar mathematical calculations to assess whether the risk of taking the drug outweighs its potential benefits. Economists use their math skills to find ways to save money, even in counter-intuitive ways. Using a profit maximization chart, economists could recommend instead of selling only 75 percent of available tickets instead of 100 percent to make as much money as possible. If the company lowers the price of tickets to attract additional concert-goers and fill the stadium to capacity, it could earn less money than selling just 75 percent of tickets at a much higher price. Economists also use mathematics to determine the long-term success of a business, though some factors are unpredictable. For example, an economist working for an airline uses statistical forecasts to determine the price of fuel by two months. The company uses this data to lock down fuel prices or to secure fuel. Bijan Vasigh, author of Aviation Introduction Economics explains that Southwest has gained a financial advantage over other carriers thanks to its fuel security strategy. Economists perform mathematical calculations with imperfectional information. Their economic models are useless in times of natural disasters, trade union strikes or any other catastrophic event. In addition, mathematics can rarely help economists predict irrational human behavior. The basic premise of economics is that people act rationally. However, people often make irrational decisions based on fear or love. These two factors cannot be taken into account in the economic model. Economists are revise the way calculations are made to take account of intangible effects such as pollution. Economists do not currently count the effects of rainforest depletion or water pollution, for example, on things such as maximising profits or business costs. Quentin Grafton and Wiktor Adamowicz, authors of the book The Economics of Environment and Natural Resources, explain that economic standards, such as GDP, are insufficient in measuring the health of the economy. A new field appears called accounting for natural resources, which attempts to attribute the value of the dollar to these costs. History of Mathematics is a history of humanity trying to understand many consider the holy grail of mathematics to be the same as in physics: the theory of everything, a unified theory that explains all physical realities. Mathematics generally plays an important role in any theory of everything, but current cosmologist Max Tegmark even goes so far as to theorize that the universe itself is made of mathematics. In his mathematical hypothesis of the universe, he suggests that mathematics is indeed a human discovery and that the universe is essentially one gigantic mathematical object. In other words, mathematics no more describes the universe than atoms describe the objects they form; rather mathematics is the universe. Tegmark even goes so far as to predict that mathematical evidence for the theory of everything would eventually fit on a t-shirt. More than 60 years ago, however, the Austrian mathematician Kurt Gödel put forward a theory that claims the opposite. Gödel's first incomplete theory concerns axiom, logical mathematical statements that are true but cannot be proved by mathematical evidence. A simple example would be equality axiom (X = X). We assume it's a true statement, but we can't back it up with mathematical evidence. Gödel's theory says that any reasonable axiomasible theory is incomplete or inconsistent. The implication, according to theoretical physicist and mathematician Freeman Dyson, is that mathematics is inexhaustible. No matter how many problems we solve, we inevitably encounter more intractable problems within the existing rules [source: Feferman]. It would also seem to exclude the potential for the theory of everything, but it still doesn't repel the world of numbers in either human invention or human discovery. Regardless, mathematics could stand as humanity's greatest invention. It forms an important part of our neural architecture and continues to strengthen us beyond the mental health with which we were born, even as we try to understand its limits. Explore the links below to learn even more about math. Related article georgia tech school of MathematicsMIT Mathematics Cole, Marilyn. Personal interview. May 10, 2011.Courant, Richard and Herbert Robbins. What is mathematics? Oxford University Press. 18 July 1996.Dehaene, Stanislas. What are numbers, really? The brain's basis for sense no. October 27, 1997.(April 19, 2011) Solomon. The nature and significance of Gödel's incomplete sentence. Institute for Advanced Studies, Princeton. November 17, 2006. (April 25, 2011) feferman/papers/Godel-IAS.pdfFeynman, Richard P. The pleasure of finding things out. Perseus Publishing House. 1999.Hill, Josh. Is mathematics discovered or invented? Daily Galaxy. April 28, 2008(April 19, 2011) David E. History of the trigonometry outline. Clark University. (19 April, Lulu. 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