THE ROLE OF MATHEMATICS FOR BUSINESS STUDIES

Mathematics is used in most aspects of daily life. Many of the top jobs such as business consultants, computer consultants, airline pilots, company directors and a host of others require a solid understanding of basic mathematics, and in some cases require a quite detailed knowledge of mathematics. It also plays important role in business, like Business mathematics by commercial enterprises to record and manage business operations. Mathematics typically used in commerce includes elementary arithmetic, such as fractions, decimals, and percentages, elementary algebra, statistics and probability. Business management can be made more effective in some cases by use of more advanced mathematics such as calculus, matrix algebra and linear programming.

Commercial organizations use mathematics in accounting, inventory management, marketing, sales forecasting, and financial analysis.

In Academia, "Business Mathematics" includes mathematics courses taken at an undergraduate level by business students. These courses are slightly less difficult and do not always go into the same depth as other mathematics courses for people majoring in mathematics or science fields. The two most common math courses taken in this form are Business Calculus and Business Statistics. Examples used for problems in these courses are usually real-life problems from the business world. An example of the differences in coursework from a business mathematics course and a regular mathematics course would be calculus. In a regular calculus course, students would study trigonometric functions. Business calculus would not study trigonometric functions because it would be time- consuming and useless to most business students, except perhaps economics majors.

Economics majors who plan to continue economics in graduate school are strongly encouraged to take regular calculus instead of business calculus, as well as linear algebra and other advanced math courses.

Other subjects typically covered in business mathematics curriculum include:

Matrix algebra
Linear programming
Probability theory

Another meaning of business mathematics, sometimes called commercial math or consumer math, is a group of practical subjects used in commerce and everyday life. In schools, these subjects are often taught to students who are not planning a university education. In the United States, they are typically offered in high schools and in schools that grant associate's degrees.

A U.S. business math course might include a review of elementary arithmetic, including fractions, decimals, and percentages. Elementary algebra is often included as well, in the context of solving practical business problems.

The practical applications typically include checking accounts, price discounts, markups and markdowns, payroll calculations, simple and compound interest, consumer and business credit, and mortgages. The emphasis in these courses is on computational skills and their practical application, with practical application predominating. For example, while computational formulas are covered in the material on interest and mortgages, the use of prepared tables based on those formulas is also presented and emphasized. Mathematics can provide powerful support for business decisions. In their later business careers, this will motivate them to consult with mathematicians and employ effective quantitative methods.

Mathematics provides many important tools for economics and other business fields. However, our discipline does not profit from this work when students (who later become part of the general public) are unaware of its existence. Presenting trivial mathematical applications only makes matters worse, since they are clearly recognizable as being of little importance. This actually diminishes our subject in the eyes of students. Using computers to bring the underlying structure of significant mathematics to undergraduates allows them to appreciate the role that our

Subject can play in their academic work and later lives. The recognition of its importance by many students each year will certainly strengthen the position of mathematics in our society. Why do business consultants and directors need to know math?" you may ask. Business is all about selling a product or service to make money. All transactions within a business have to be recorded in the Company accounts and quite often involve very large sums of money. So for example, you need to be able to estimate the effect of changing numbers in the accounts when trying to work out your expected performance for next year. Also businesses rely heavily on using percentages, in particular anyone who works as a sales person will need to be quick at mental arithmetic, approximation and in working out percentages. The more percentage discount you give a customer when you

sell them a product, the less profit your company will make (and quite often the less you will be paid!) so it really does pay to know your math.

If you work as a sales assistant in many stores you now need to have the ability to calculate the cost of goods and change the customers require without using the till. Businesses like to know that you can cope if the machines break down and also they believe that you can give better customer service if you can respond to customers who know their mathematics. This is the stuff of letters which often appear in local newspapers as "… I bought 2 of the same item at Shop priced at $3.00, and gave the young sales assistant a $10 note and a $1 coin expecting to get a $5 note as change and do my bit to help prevent the store from running out of change in the till. To my amazement the sales assistant insisted that I had paid too much, I tried to explain to no avail but in the end reluctantly took back my $1 coin and was given 4 more $1 coins as change.

Finally, there are jobs around where you can escape from using any math at all - refuse collector, builder's laborer, farm hand etc. However, when you invest your hard earned cash in the bank or building society or get a loan - how do you know that you are not being ripped off? You need to use math to calculate compound interest rates (to see how much your savings can grow). You also need to use math to understand the monthly percentages, which are added to your credit cards or bank loans, or you could end up paying $10,000 in 5 year's time for borrowing $2,000 today! This is a good reason to understand mathematics.

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