

## ***The Concept***

I have played the following scene hundreds, if not thousands, of times. A seemingly intelligent person, upon learning that I am a professional mathematician, looks at me with a mixture of admiration and suspicion, and says something like, "You must be a genius! I was always dreadful in math. Without my calculator, I am hopeless with numbers." But in the same encounter, that person will regale me with all the clever choices and decisions that he or she has made in business, investment, gambling, or simple household finance—decisions that, as any objective observer should realize, desperately require some simple arithmetic acumen in order to be made wisely, an acumen that the individual surely lacks if the confession of 'math impotence' is legitimate.

- How can you institute a successful college savings program if your lack of understanding of compound interest and inflation prevents you from computing accurately the amount you will need in the future and the amount you need to save/invest now?
- How can you minimize your taxes (legally of course) if your inability to comprehend percents inhibits your appreciation of the tax consequences of bonuses, expenses, deferrals, exemptions, and the like?
- How can you wisely purchase insurance, frequent casinos, bet on sports, or buy lottery tickets if you haven't the faintest understanding of odds and the elementary laws of chance?
- How can you start and run a business successfully if you can't add numbers or estimate costs?
- How can you decide whether to buy, finance, or lease a new car, or for that matter, whether to buy or rent a home, if you don't understand the basic arithmetic that underpins the financial instruments that make those transactions possible?



The answer is: You can. But perhaps very poorly, and with awful financial consequences!

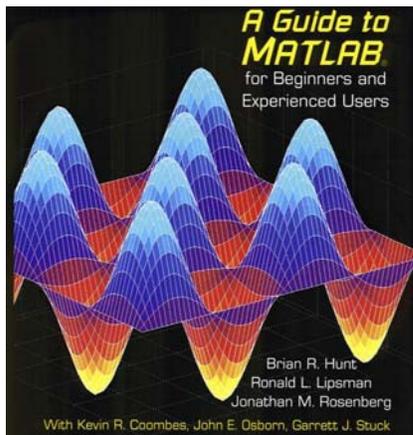


The goal in this book is formidable: To remedy the major gap in the elementary education of the vast majority of people, who were either so scared or so confused by their math teachers, that they suffer from the common malady in our land known as *math phobia*, a fear and lack of understanding of the elementary rules and practices of basic arithmetic, leading to ignorance of the fundamental arithmetic tools they need in everyday financial life. The objective is to present, via the book and its companion web site, sufficiently clear, enlightening, and even entertaining explanations and examples in order to propel the average math-phobic person to a higher level of understanding, and thereby equip him or her to better cope with the financial dilemmas of life.

In fact, if you are math-phobic, it is probably so because you were cheated in school. Either they didn't teach you arithmetic at all, instead relying exclusively on calculators. Or, even if they did succeed in imparting some arithmetic knowledge to you, they didn't show you what use you could put it to. They drilled you on cooked up, meaningless problems rather than introduce you to the basic arithmetic quandaries that you would encounter in your daily life—like how to compute: how much a specific sum invested in a compound interest account will grow to over a certain number of years; or the monthly payment on a loan; or the odds of winning a trifecta. They didn't teach you these things—but they should have. What's more shameful is that in today's world, with computers and the Internet at your fingertips, even the math phobic can be provided with interactive tools to enable them to do these computations—with ease and in a way that enhances understanding. If you either lack understanding or don't have access to the tools (or both), then my goal is to remedy these deficiencies for you.

## About the Author

I am not a stockbroker, not an insurance agent, don't work in a financial institution, nor am I an accountant. I am a university professor of mathematics and an academic administrator in the science college of my university. How does that qualify me to write this book? Well, like many people my age, although I have none of the formal qualifications listed above, I do have many years experience buying and selling stocks and mutual funds, buying and canceling insurance policies, paying college tuitions, paying taxes (lord help me, I am REALLY experienced at that one), spending my salary, hurling epithets at my credit card company, obtaining and disposing of cars and homes, and worrying about how I can retire comfortably. I am also good with numbers, very good with numbers. They don't frighten me the way they do such a substantial portion of the population. I actually like them, enjoy working with them. And so when it comes to the arithmetic behind the decisions one confronts in doing all the things that I just mentioned, I don't mind "crunching the numbers". I like to examine the numerical alternatives, investigate how different choices lead to different outcomes, speculate on possibilities, and act on past performance. I also have substantial experience in writing technical help books (I've written six of them). And finally, I have the training and experience of an educator.



More precisely, I am Associate Dean and Professor of Mathematics at the University of Maryland. I have a Bachelor of Science degree from the City College of New York and a Ph.D. in Mathematics from M.I.T. I have published books dealing with mathematics and computing with John Wiley and Sons, Cambridge University Press, and Springer-Verlag. I am the author of more than 70 scientific research articles and the editor of numerous mathematical research volumes. In the course of a long career in education I have tutored, mentored and guided scores of young people in basic math, and I have served as an informal financial consultant to family and friends for many years. More information on my personal and professional qualifications can be gleaned from my web site (the URL is given in the footnote below).

## Target Audience

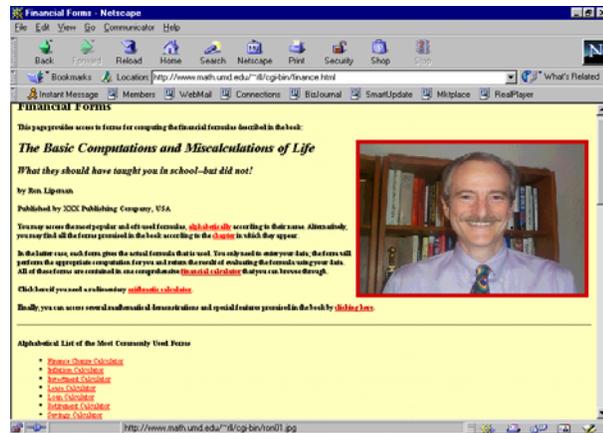
My guess is that the older you are and the more experience you have had in dealing with life's financial vicissitudes, the more of this book you will already know. So my intended audience is first and foremost young people. Young people: pay attention! They are not teaching you this stuff in school. And you desperately need to know it. There are a ton of traps out there waiting for you to fall into them. Having the financial tools I impart in this book will help you to avoid those traps.

Others who will likely profit (pun intended) from this book include: young adults who are no longer in school, but who have already encountered some of the early needs for the arithmetical wisdom to be found in these pages; thirty-somethings with young families and not enough time or energy to think through financial matters; middle age folks who suspect that maybe they have not learned the lessons I would hope they should have by this point in life; aging boomers who have been too busy leading the good life to notice that father time is bearing down on them; and finally elderly folks who, despite the fact that they know this stuff, have not figured out how to teach it to their adult children and young grandchildren. In short: all of us who face financial decisions.

## Special Features

1. **Comprehensive.** This is one of enumerable self-help or how-to books with an emphasis on financial matters. What makes this one unique? The others teach you how to: save your money, invest your money, stay or get out of debt, minimize the taxes you pay, buy a house, finance a car, choose between insurance policies, win the lottery, beat the market, start a business, or retire rich. But almost all of them focus on one, or at most a few, of these highly desirable goals. This book will discuss all of them in a comprehensive and consistent manner.
2. **Honesty.** The emphasis in this book is different from most in the genre. There will be no grand strategies for guaranteeing you a 12% return in the market over a decade. Nor will there be a foolproof plan for starting up a business. And finally, you will not find any instructions for keeping your creditors at bay. Rather, I will argue that in order for you to navigate the financial shoals of your life, you need to understand a few basic arithmetic concepts, and how to do some simple arithmetic computations. Furthermore, recognizing that the overwhelming majority of the population is math-phobic, I will explain the concepts in the simplest possible layman's terms, and provide you with an electronic tool for actually doing the computations. It is not a recipe for financial success. I do not claim that after reading this book you will know how to become a millionaire. In fact, all of us are subject to the fickle whims of fate and the constraints of our own financial circumstances: recessions arise through no fault of our own, job opportunities fail to materialize, parents and children turn out to be more needy than anticipated, illness can strike unexpectedly, and so for that matter can extreme good fortune. The point is that life is hard, and often unpredictable. What is certain is that we are constantly faced with decisions to make, many of which have financial content and implications. We ought to equip ourselves with the best possible ammunition for making those decisions. That is my prime goal here, namely, to provide you with some of that ammo. Therefore, the main thing you should expect from this book is the arithmetic tools—more precisely, the electronic tools to do the arithmetic—that will help you to make those decisions. It may not be as good as guaranteeing you a million, but it is more realistic and in the end, I believe, extremely helpful.

3. **The Web Site.** The book has a companion web site at which you can do ALL the basic computations that I discuss in the book and which you need to perform in order to answer all the basic questions that puzzle you in matters of savings, investing, taxes, inflation, insurance, mortgages, leases, credit, gambling, business, and retirement. You can sample its wonders by pointing your browser to



<http://www.math.umd.edu/~rll/cgi-bin/finance.html>

4. **Format.** The book is attractively laid out with the use of dingbats to highlight passages containing especially useful, important or fundamental information. This heightens interest and improves readability. The dingbats are explained carefully in the book's preface, which

you can read below.

5. **Personal.** The book is infused with personal experiences and opinions that serve to highlight the motivation for and foundation of my financial arguments. The autobiographical nature of the presentation is unusual for a financial self-help book.

## Market Timing

In fact the subject matter is timeless—the need for the practical and helpful information in this book is enduring. But today there are special factors that make the need for the book's wisdom and insight especially compelling:

1. **Volatile markets.** The intense—some might say *violent*—churning of the financial markets in recent years (with no end in sight) causes great uncertainty and the need for deliberate and informed planning and action on the part of investors and consumers.
2. **The information revolution.** The mind-bending advances in computing technology open wonderful opportunities to the savvy, but threaten the financial safety of those who fail to keep up.
3. **Domestic Change.** The great cultural changes experienced by U.S. society in recent decades have resulted in families and individuals under enormous time pressure. People need easy-to-use computational tools in order to cope.
4. **International Upeaval.** The end of the Cold War has resulted not in tranquility but increased terror and dangerous new enemies. People feel threatened. Tools that can enhance their financial security are most welcome.

The need for consumers and investors to understand the financial choices that confront them has never been greater. The points above reinforce the desirability of a comprehensive approach to financial planning and management, as well as a basic understanding of the arithmetic that should guide that approach, and finally the tools necessary to do the arithmetic. The book is designed to address that need.

The image shows a Netscape browser window displaying the 2002 U.S. Individual Income Tax Return form 1040. The browser's address bar shows the URL: <http://www.irs.gov/pub/irs-pdf/1040.pdf>. The form is titled "1040 U.S. Individual Income Tax Return 2002" and includes instructions for filling it out. Key sections visible include:

- Label:** Fields for "Your first name and initial", "Last name", "Your social security number", "If a joint return, spouse's first name and initial", "Last name", "Spouse's social security number", "Home address (number and street)", "Apt. no.", "City, town or post office, state, and ZIP code", and "If you have a foreign address, see page 21".
- Filing Status:** Radio buttons for "Single", "Married filing jointly (even if only one had income)", "Married filing separately. Enter spouse's SSN above and full name here.", "Head of household (with qualifying person)", and "Qualifying widow(er) with dependent child (your spouse died)".
- Exemptions:** Check boxes for "Yourself", "Spouse", and "Dependents".
- Important!:** A warning that "You must enter your SSNs above".

## Competitive Analysis

The shelves in the "Financial Self-help" section at Borders or Barnes & Noble are many and dense. Suze Orman is only the latest in a succession of media gurus whose presence dominates the scene in this area. This book is different from hers and the others of the genre in two main respects: it is comprehensive, and it is enriched by a companion web page that is powerful, easy-to-use, readily accessible, and highly useful. It will allow the math-phobic citizen to easily perform the essential computations (and avoid the miscalculations) that are crucial to a successful financial voyage through life. No other competitor has anything remotely like it.

### The Power of Compound Interest

Amount that \$100 grows to (with daily compounding) after specified number of years at specified interest rate		<u>Number of Years</u>				
		<b>1</b>	<b>5</b>	<b>10</b>	<b>25</b>	<b>40</b>
<u>Interest Rate</u>	<b>3%</b>	103.05	116.18	134.98	211.69	332.00
	<b>5%</b>	105.13	128.40	164.87	349.00	738.80
	<b>7%</b>	107.25	141.90	201.36	575.36	1,644.02
	<b>8%</b>	108.33	149.18	222.53	738.74	2,452.39
	<b>10%</b>	110.52	164.86	271.79	1,217.83	5,456.82