

## Introduction

Numbers are scary. They have a mystifying language of their own—*binomial*, *exponent*, *logarithm*, *quotient*—and they tend to confound us as they get larger and larger. *What is the negative square root of 16? What is the highest prime number greater than 900 and less than 1,000?* If you stopped taking math in high school, you might find such questions bewildering.

Yet not all numbers require the expertise of a mathematician or the specialized skills of an accountant, a statistician, or an economist. Simple arithmetic and a basic knowledge of algebra can lead to many useful discoveries. Particularly for lawyers, who spend more time mastering the peculiarities of language than of numbers, a trip down mathematical memory lane may provide some wonderful insights and helpful techniques for practicing law.

This book is meant to improve legal practice. It provides a variety of formulas that can be applied to thousands of case scenarios. The formulas can be used to estimate the value of a case informally, to negotiate or mediate settlements, or to prove damages in the course of a trial. While many of the discussions that follow deal with the calculation of damages or the estimation of losses, the formulas that fill these pages can be exploited to serve many useful purposes: deciding whether to accept or reject a case, whether to hire an employee or retain a contractor, whether to sell or not sell a business, to name a few.

Of course, there is no substitute for a forensic financial expert when it comes to complex litigation such as substantial tort cases, class actions, high-income divorces, and disputes over the value of a business. Still, this book will enable attorneys to add a dose of precision lawyering to their case work-ups, their settlement demands, and their presentations to mediators, arbitrators, judges, and juries. Even where expert witnesses are retained, this book will assist lawyers in preparing the experts, understanding their methodologies, and cross-examining the opposing experts. For those lawyers who make arbitrary settlement demands or offers without any technical support for the numbers in dispute, this volume should be a game-changer.

The book is divided into 18 chapters. The first nine chapters address the basic rules and strategies and introduce the most fundamental formulas. Important threshold concepts, like calculating interest and measuring probability, are discussed, and the key rates of return and financial ratios are outlined. The last nine chapters of the book introduce and apply various formulas to the major practice specialties: personal injury and wrongful death, business cases, employment law, real estate, environmental law, bankruptcy, intellectual property, and family law. The last chapter provides a detailed examination of the retention of forensic experts and the top rules for using them strategically.

No attempt is made here to provide the level of technical training or the depth of analysis that would accompany the teaching of such formulas in a graduate business or accounting program. Rather, the book is meant for practicing attorneys who want to understand how a formula works, what it does, and how it can assist them to address, resolve, or value a case. While it can be read cover to cover, the book can also be consulted frequently as a reference source for busy practitioners: *What was that formula for calculating lost fringe benefits?* (See Chapter 10). *How much money should we offer today to avoid a long-term alimony obligation?* (See Chapter 17).

Achieving mathematical literacy is an admirable goal unto itself. This book does not promise such results. Still, if the use of well-recognized formulas serves to professionalize the practice of law, to bolster the quality of advice provided to our clients, and to generate a more responsibly and skillfully presented case for damages, then we will have advanced the legal profession in a meaningful way while cross-fertilizing the fields of law, accounting, economics, and statistics.

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