Guesstimation: Solving the World's Problems on the Back of a Cocktail Napkin

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Guesstimation is a book that unlocks the power of approximation--it's popular mathematics rounded to the nearest power of ten! The ability to estimate is an important skill in daily life. More and more leading businesses today use estimation questions in interviews to test applicants' abilities to think on their feet. *Guesstimation* enables anyone with basic math and science skills to estimate virtually anything--quickly--using plausible assumptions and elementary arithmetic.

Lawrence Weinstein and John Adam present an eclectic array of estimation problems that range from devilishly simple to quite sophisticated and from serious real-world concerns to downright silly ones. How long would it take a running faucet to fill the inverted dome of the Capitol? What is the total length of all the pickles consumed in the US in one year? What are the relative merits of internal-combustion and electric cars, of coal and nuclear energy? The problems are marvelously diverse, yet the skills to solve them are the same. The authors show how easy it is to derive useful ballpark estimates by breaking complex problems into simpler, more manageable ones--and how there can be many paths to the right answer. The book is written in a question-and-answer format with lots of hints along the way. It includes a handy appendix summarizing the few formulas and basic science concepts needed, and its small size and French-fold design make it conveniently portable. Illustrated with humorous pen-and-ink sketches, *Guesstimation* will delight popular-math enthusiasts and is ideal for the classroom.

Guesstimation: Solving the World's Problems on the Back of a Cocktail Napkin Details

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From Reader Review Guesstimation: Solving the World's Problems on the Back of a Cocktail Napkin for online ebook

Anya says

I'll admit it, this was a really difficult read for me. Studying abstract math and only thinking about logic for years has only been detrimental to my ability to think about applied problem solving. This is a really short book, but each section left me thinking for hours afterward, trying to figure out distances and volumes, wanting to measure items and calculate things. Basically, it left me thinking about all the things I tried to avoid in math and physics courses for my whole life: the real world.

Valerie says

I love this book, and my students will too, as I assign each problem to them.

Nam says

I like the idea of this book: a collection of practical math problems that can be solved in 5 mins. Though the book starts very well, it grows repetitive quite fast. In most problems, the key factor is to guess correctly the value ranges of entities, and it's very hard to do with many Americancentric questions.

Terri says

I understand base ten, took algebra, calculus, and trig in high school (and got good grades at those), and have studied probability and statistics in college (at both the Bachelor's and Master's levels), so even though math isn't my strong suit, I am fairly competent at it. But I was confused by page 4 of this book - the authors present an equation and then the answer without the crosswalk between the two. Skimming ahead, I see that this book and I are not going to get along at all. One question requires an idea of how much food costs - the authors estimate it at somewhere more than 5% and less than 50% of a person's income and then pick a percent in between at random. That is how most of the answers in this book are figured. I find wildly random guesses like that completely useless. Even my husband, who does statistical analysis for a living was impatient with this book and couldn't get through it.

Duane says

Guesstimating is the ability to think abstractly and come up with a logical answer. How many golf balls in a school bus? How many diapers in a day in China? How big was that explosion? How far does the earth travel in a year? The one thing I remember from this is the number of seconds in a year is pi x 10 to the 7th. Not sure how that is handy, but it is pretty cool. The book focuses on a series of problems and then gives the solution with what should be (crappy educational system aside) common sense, well known constants and a

bit of basic math. I'll admit I was stumped by a few, but mostly in the electrical amp/volt/ohm neck of the woods.

Dawnh says

A physics professor at my school is one of the authors of this book. We are using it as the text for a seminar he teaches called Physics on the back of an envelope. It is a lot of fun and really helps me learn to think through things with quick estimates and comparisons. The book itself is a quick, easy read with lots of examples and hints. After a bit of practice it is fun to come up with my own questions to estimate.

Aathavan says

I thoroughly enjoyed this book. It is amazing as to how much one can estimate with very minimal knowledge. Some of the problems that stand out are

- what are the odds /mile of dying in a plane and in a car?
- How much star debris would a supernova dump on earth?
- how much more corn fields would we need to convert to ethanol based fuel economy?
- What is the power density of the sun?

Joanna Chen says

Amazingly interesting set-ups for conquering estimations. Gives lots of useful figures that all people should know and teaches you how to quickly solve your own large scaled problems! Also great for interview questions.

Danjo says

This book is meant to be read fast, the reader dwelling on physics formulas and arithmetic only in intriguing areas. It is a book of big numbers; you understand logarithms inadvertently by its end. The book covered high-school physics well; it contains "word problems" about size, speed, astronomy, electricity, pressure--all the fun stuff. Lots of conversions to standard metric units. Handy technique for quickly estimating using the mean of exponents. Examples of problems: What percentage of U.S. land mass would need to be covered with solar panels to supply our current power needs? and How many people in the world are currently brushing their teeth? Sometimes silly questions, but there is always the underlying point that we are a lot of people and our small actions add up hugely.
Be warned that the book is rife with corny humor that occasionally evokes chortles.

Nicha says

There are not only some brilliant questions which are interesting to solve, but also many nonsense questions (or maybe I just couldn't understand them)
In the beginning it was interesting, it didn't attract me at all, even I love mathematics.

Luke says

This is a light-hearted and enjoyable book. Only very basic maths required, and not too much knowledge is assumed (though common sense and general knowledge do help). Useful as this kind of question occurs in interviews, and it is a useful still to have anyway.

Maurizio Codogno says

[se vuoi una mia recensione più seria di questo libro, va' su Galileo, "http://www.galileonet.it/recensioni/1..." !]
La spannometria è la regina delle scienze approssimate, come scrissi a suo tempo sul mio Gergo Telematico (http://xmau.com/gergo/). Un po' più seriamente, quella di stimare i risultati a partire da dati apparentemente incompleti è un'arte che ha anche dei risvolti pratici, visto che permette di verificare con carta e penna se i numeri che si ottengono sono coerenti con quelli che sono stati indicati. In questo libro abbiamo così un gran numero di "Problemi di Fermi", chiamati così negli States perché il grande fisico amava porli ai suoi collaboratori. Le domande sembrano assurde, spaziando da "quanti accordatori di pianoforte ci sono a Roma?" a "quant'è l'equivalente energetico in lattine di Coca-Cola della benzina consumata da tutti gli autoveicoli in Italia?". Ma quello che conta sono altre cose: imparare a suddividere il problema in passi gestibili, sapere quali sono gli arrotondamenti fattibili, e anche mettere in pratica le formule fisiche (Weinstein è un fisico e tiene un corso universitario proprio su questi temi, mentre Adam è matematico). Il testo è scritto in maniera umoristica, o per meglio dire fredduristica; siete avvisati. Ultima nota di merito per la traduttrice Luisa Doplicher e per la "rilettrice" Marinella Lombardi, che hanno fatto un bel lavoro nell'italianizzare i riferimenti. Non c'è nessuna differenza tecnica nel valutare il numero di chilometri percorsi dagli italiani o il numero di miglia percorse dagli americani; ma per un lettore nostrano la prima stima è molto più interessante.

Vorbis says

I'm actually not sure if I read this or a version that was 2.0 - but there's no 2.0 listed on the author's booklist, so we'll say it was this one. It presents guesstimated problem solving to really obscure and stupid questions and then solves them. There's no story tying anything together, it's like one of those quiz books where every page is just random stuff that caught the author's interest.

Which is actually really boring.

I flipped through, there weren't any problems I actually wanted to know the solutions to, so I didn't stick around to find out the method. If I ever feel like inventing problems for their own sake so I can pretend to solve them, rather than you know, actually solving a real problem... I might come back to it. Doubtful though.

Alexander Ray says

The introductory part of this book contains a good overview on Fermi estimation, and particularly why and how to use Approximate Geometric Means.

I would recommend checking out the book (from the library) just to read the short introduction, and flip through a couple of the problems to see what they're like.

You can 80/20 this book with about 10 minutes.

Bashnev says

A good introduction to estimations or so-called "Fermi problems". Lots of fun estimates to have a go at. Mostly only arithmetic is required though some problems require a knowledge of volume calculations and basic concepts from physics. Good source of questions for teachers wanting problem solving material without excessive discipline content required to actually do the problems.
