

Slide Rule, A Textbook for Classroom and Self Instruction, C. L. Johnston, 4th printing, 1970

This text, originally published in 1953, has been designed to be useful to students who may have only a limited background (and limited needs) in mathematics (Chapters 1-9), as well as those who understand Trigonometry and beyond (Chapters 10-15). The subject material and types of calculations discussed are relevant to a wide range of applications in the trades & crafts, science, engineering, finance, economics, and business. As the title suggests, the book is organized in such a way as to make it equally useful for individual or classroom use.

The purpose of logarithms in the design and operation of the slide rule is briefly but suitably covered in an early chapter. The drill problems presented at the end of chapters are mostly purely numerical problems but there are enough word problems included to keep things interesting. In the drill problems, no particular field of problem application is emphasized; there is no stress on the types of scientific or engineering applications one sees in some texts. The 4th printing includes about 800 end-of-chapter drill problems; answers to half of these (odd-numbered problems) are provided in the back of the book.

Since the text is designed to accommodate both students who wish only to learn how to do 'simple arithmetic' as well as those who wish to learn more advanced techniques, the scale set used depends on how far into the book the student proceeds. As stated in an introductory section, "A very minimal slide rule for the work of the first eight chapters... should contain the following scales: A, B, C, D, and K. A more satisfactory slide rule and one which would cover the work of the first twelve chapters should have the following scales: A, B, C, CF, CI, D, DF, K, L, S, ST, T and the DI (though not essential, is sometimes helpful)." Chapters 13-15 require a Log-Log rule. The author does not recommend any specific rule but includes photos and descriptions of Dietzgen's 1738, 1734, and 1737; AcuMath's 150; SIC's 1530A; K&E's DeciLon; Post's Versalog; Pickett's 803-ES and N4-ES; Ricoh's 151; and Aristo's 0970. In the text, where the use of different slide rules to accomplish the same task would require slightly different instructions, such are provided. This is particularly relevant for Pickett's N4. Oddly, although the N4 is a vector-type rule and the existence of vector-type rules is mentioned in the book, no specific mention is made of hyperbolic trig scales, nor are there any exercises which might show how to calculate hyperbolic trig functions. The author might as well have used a Pickett N3 instead.

The book contains appendices entitled, "The LL0 and LL00 Scales", "Finding Powers of Numbers less Than One", "Miscellaneous Problems Solved on the LL0 Scales", and "Logarithms of Any Base". There are also three numerical tables: Four Place Logarithms, Trigonometric Functions, and Natural Logarithms. There is a less-than-exhaustive one page index.