# THE LIFE OF A MATHEMATICIAN IN THE PRE-COMPUTER AGE!

Try some of these problems from "The Tutorial Arithmetic" by W.P. Workman, M.A., B.Sc., and R.H. Chope, B.A., University Tutorial Press, London, 1902 so that you can appreciate the joys of modern technology.

**From the Preface of the book:**

The present treatise on Arithmetic, though written so as to be as far as possible complete in itself, is intended primarily for those who have already received some grounding in the subject. . . . Formal completeness is perhaps beyond the reach of an English author whose soul is vexed perforce with Weights and Measures and the barbarous mechanism by which they are manipulated, who is condemned also by the tyranny of an examination system to waste the space at his disposal in elaboration of the details of Complex Fractions, Abstract and Concrete, and other subjects of similar inelegance and uselessness. . . . Section XI will be found to contain, I believe, the hardest collection of arithmetical problems in existence. It will serve as a play-ground for those who imagine that they have nothing more to learn. . . .

**From the notorious section XI. Harder problems.**

1. Determine the missing figures in the following division sum:-

$$\begin{array}{r} 7..)51..1(.2 \\ \underline{..1.} \\ 1.1. \\ \underline{....} \\ 1.9 \end{array}$$

2. A boy multiplied a number by 467 and obtained the product 1925817. The figures 9 and 7 were wrong. What ought they to have been?

6. Simplify $\dfrac{23\,401\,369\,863\,013\,698\,630\,136\,986\,301\,369\,629}{34\,500\,729\,927\,007\,299\,270\,072\,992\,700\,729\,582}$.

14. Find the fifth root of 30 517 578 126 to 30 places of decimals.

16. Prove that $9x^2 + 1\,481\,481\,451\,851\,856$ is an exact square when $x = 123\,456\,787\,654\,321$.

18. Prove that the product of the first thousand numbers is terminated by 249 zeros; the product of the first million by 249 998; the product of the first billion by 249 999 999 997; and so on.

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