

Mathematics For Learning

With Inflammatory Notes for the Mortification of Educologists and the Vindication of "Just Plain Folks"

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[Editor's note: In the Spring 2004 issue of *The AMATYC Review*, Schremmer introduced his idea for an open-source serialized text: *Mathematics For Learning*. The Preface to the text appeared in the Spring issue. This issue contains Chapter 1.]

Part I. Arithmetic: Numbers Specified *Directly*

Mathematics Starts with Arithmetic

Arithmetic is said to have originated, some four or five thousands years ago, when Babylonian merchants were faced with the problem of **accounting** for more *goods* and *money* than they could handle personally. The solution was to **represent** the goods in the warehouse and the money in the safe by various scratches on clay tablets so that rich merchants could see the situation their business was in without the inconvenience of having to go to the warehouse and/or to open the safe.

As time went by and businesses grew more and more intricate, though, the scratching system had to become powerful enough to represent what needed to be accounted for. Eventually, the *scribes* (literally, scratchers) who had been doing the accounting had to invent **double-entry bookkeeping** to represent even more complicated business activities and thereafter became known as **accountants**.

Here, we shall recreate, with a bit of poetic license, but *from a mathematical point of view*, the way the accounting system might have evolved¹ over the centuries to deal successively with:

1. Money on a counter,
2. Money changing hands across a counter,
3. Goods on a counter,
4. Goods changing hands across a counter,
5. Goods exchanged for money (that is buying and selling).

We shall thus pretend to work in the *real world* and, instead of scribing clay tablets,

¹Of course, arithmetic didn't evolve in *that* order but what reason do Educologists have for clinging to the historical order? The order followed here seems to be rather logical and natural. In any case, the thinking underlying the historical stages was probably more or less as discussed here.