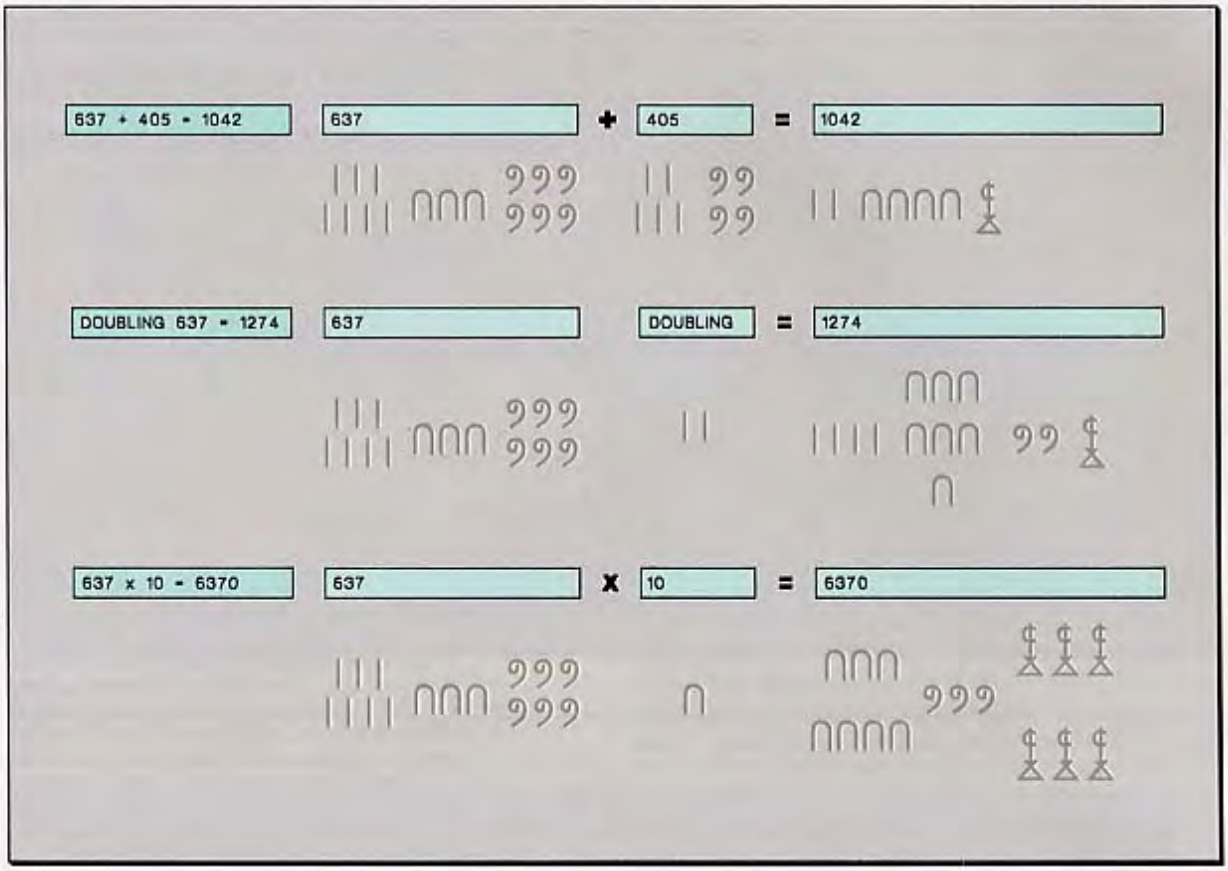
Figure 3 Examples of Egyptian methods of arithmetic



geophysics. Lotus flowers and tadpoles represent large numbers, and one can only hold up one's hands in amazement at so large a number as a million. The base is, of course, 10. Poor though 10 is as a base,[4] it was and remains popular because we have 10 fingers to count on. The Egyptian system, like the Roman, did not use place notation, and so had no need for zero.

Egyptian methods of arithmetic are illustrated in Figure 3, reading the symbols from right to left, i.e., the more significant figures are to the right. The three examples represent: adding 637 and 405; doubling 637; and multiplying 637 by 10. The system has been derided as clumsy, but for more than a thousand years no nation was able to improve on the Egyptian notation and methods.[5] Again, Figure 2 is the key to understanding the notation in Figure 3. This system makes addition, subtraction, doubling, and multiplying by 10 easy. We, on the other hand, must memorize 55 combinations in order to add, and we must learn another table in order to multiply.

Most of us probably imagine that children always learned addition and multiplication tables, but in 1542 Recorde had to explain at length how to multiply two numbers between 5 and 10. Consider the implication of Samuel Pepys's entry in his diary for July 4, 1662: "Comes Mr. Cooper of whom I intend to learn mathematiques, and do begin with him today. After an hour's being with him at arithmetique, my first attempt being to learn the multiplication table." Five days later he records: "Up by four o'clock, and at my multiplicacion-table [sic] hard, which is all the trouble I meet withal in my arithmetique." Now Pepys was a 30-year-old graduate of Cambridge, an able man of business, soon