

Transformation from Decimal to Octimal Notation.

For a considerable time to come, books will be in common use, wherein the decimal system is used for all numerical values. Many of these will never be reprinted but, nevertheless, will remain as valuable works of reference. It becomes necessary therefore that some method of ready transformation should be known to every individual. During such time as the new system is being adopted throughout any country, people will be making transformations continually; many of these will, of necessity, have to be accurate, but in the great majority of cases, some rough approximation would be quite sufficient.

The mathematical method of transforming a number from one system, where it is expressed in terms of powers of "ten" to another with radix "eight" may be found in most text-books on algebra in the chapter on "Scales of Notation."

The operation consists, simply, of successive divisions by eight carried on, of course, in the decimal system, in which the number is already expressed; the remainders from the various divisions will be the figures constituting the required expression in the new system. e. g.

$$\begin{array}{r}
 8)1000000 \\
 8)125000-0 \\
 \quad 8)15625-0 \\
 \quad \quad 8)1953-1 \\
 \quad \quad \quad 8)244-1 \\
 \quad \quad \quad \quad 8)30-4 \\
 \quad \quad \quad \quad \quad 3-6
 \end{array}$$

Thus the number of objects represented by 1,000,000