

4. Four units of the tenth order, six of the eighth, four of the seventh, three of the fifth, seven of the fourth, nine of the second, one of the first order.

7. Principles of Notation and Numeration.

1st. Figures have two values, Simple and Local.

The **Simple Value** of a figure is its value when taken alone. Thus, 3, 4, 5.

The **Local Value** of a figure is its value when used with another figure or figures in the same number. Thus, in 472 the simple values of the several figures are 4, 7, and 2; but the local value of the 4 is 400; of the 7 is 7 tens, or 70; and of the 2 is 2 units.

NOTE.—When a figure occupies the first place, its simple and local values are the same.

2nd. A digit or figure, if used in the second place, expresses tens; in the third place, hundreds; in the fourth place, thousands; and so on.

3rd. As 10 units make 1 ten, 10 tens 1 hundred, 10 hundreds 1 thousand, and 10 units of any order, or in any place, make 1 unit of the next higher order, we readily see that the Arabic form of notation is based on the following

GENERAL LAWS.

I. The different orders of units increase from right to left, in a ten-fold ratio.

II. Every removal of a figure one place to the left, increases its local value ten-fold; and every removal of a figure one place to the right, diminishes its local value to one-tenth of its previous value. Thus,

6 is 6 units.

60 is 10 times 6 units.

600 is 10 times 6 tens.

6000 is 10 times 6 hundreds.

4th. Every period contains three figures, (units, tens, and hundreds,) except the left hand period, which sometimes contains only one or two figures, (units, or units and tens.)

RULE FOR NOTATION.

I. Beginning at the left hand, write the figures belonging to the highest period.

II. Write the hundreds, tens, and units of each successive period in their order, placing a cipher wherever an order of figures is wanting.