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Extended Applications of Ekadhiken Purvena Sutra

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Abstract: Vedic Mathematics is derived from two words “Veda” and “Ganit”. In this paper, we study a special Method for Multiplication based on “Ekadhiken Purvena” and Up-sutra Adyordaskam, Adyorsatkam, Adyorsashtrakam. In this paper, our methodology includes a sum of the first digits of both numbers is 10, 100, 1000..... We are confident that this method will inspire the Vedic Mathematics learner to think differently about their creativity.

Keywords: Ekadhiken Purvena, Adyordaskam, Adyorsatkam, Adyorsashtrakam.

Introduction: Swami Ji has made Mathematics simple by introducing Vedic Sutras. Vedic Mathematics the book entitled as written by Swamiji has 16 sutras and 13 sub sutras that can be used for all branches of mathematics. Vedic Mathematics was rediscovered by Swami Bharti Krishna Trith Ji Maharaj from the Vedas between 1911 and 1918. Jagadguru Shankaracharya Swami Bharati Krishna Tritha was born on 14 March 1884 in Tamilnadu. He was an Indian monk and Shankaracharya of Govardhana Matha in Puri Odisha from 1925 until he died in 1960. Swamiji's childhood name is Venkatraman.

Methodology: This formula is an expansion of the Ekadhiken Purvena sutra. We study in our old study this formula uses like that when last digit sum is 10 that method called Antyayordashakepi and when last two-digit sum is 100 that method called Antyayorsatakepi and so on ... In this paper, we extended it. We introduced when the first digit sum is 10 and the remaining digit is the same then this sutra is called Adyordaskam, when the first two-digit sum is 100 and the remaining digit is the same then this sutra is called Adyorsatkam and so on...

Up-sutra Adyordaskam working process: If we find $ab \times cb$ then -

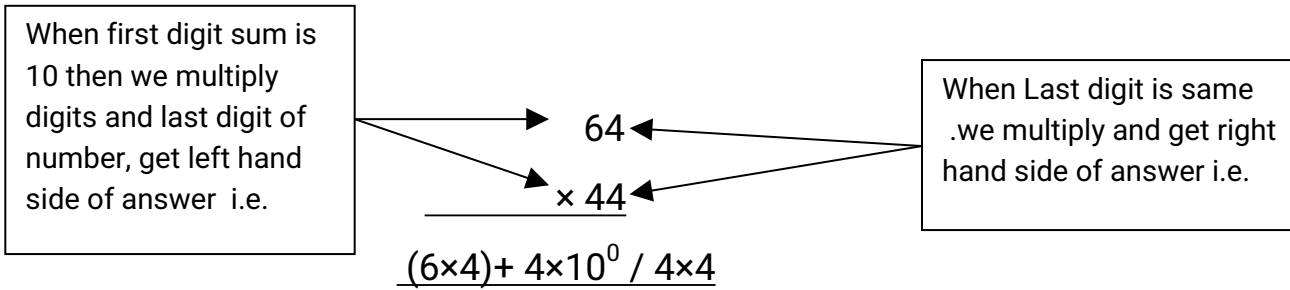
First, we check the last digit of both numbers is the same or not if the last digit is the same then we again checksum of the first digit is 10 or not. If both conditions are yes then we apply the formula. Algorithm:

1. First, we compute $b \times b$
2. Then $(a \times c) + b \times 10^0$.
3. Then we write the final answer.

We explain **process** with the help of following example -

Example 1: 64 × 44

Solution: Using up-sutra Adyordaskam we solve answer in parts i.e. left part or Right part.



Hence answer of 64 × 44 is 2,816.

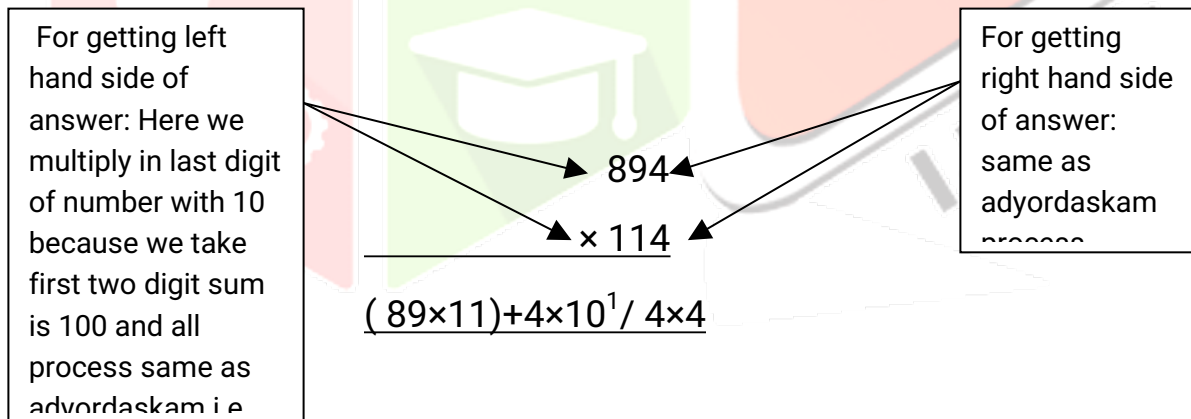
Up-sutra Adyorsatkam working process: If we find ab×cb then -

First, we check the last digit of both numbers is the same or not if the last digit is the same then we again check sum of the first digit is 100 or not. If both conditions are yes then we apply the formula. Algorithm:

1. First, we compute b×b.
2. Then (a×c) + b×10¹.
3. Then we write the final answer.

Example 2: 894 × 114

Solution: Using up-sutra Adyorsatkam we solve answer in parts i.e. left part or Right part.



Hence answer of 894 × 114 is 101,916.

Up-sutra Adyorsashtrakam working process: If we find ab×cb then

First, we check the last digit of both numbers is the same or not if the last digit is the same then we again checksum of the first digit is 1000 or not. If both conditions are yes then we apply the formula. Algorithm:

1. First, we compute b×b
2. Then (a×c) + b×10².
3. Then we write the final answer.

Example 3: 8898 × 1118

Solution: Using Up-sutra Adyorsashtrakam we solve answer in parts i.e. left part or Right part .

For getting left hand side of answe : Here we multiply in last digit of number with 100 because we take first three digit sum is 1000 and all process same as adyordaskam i.e.

$$\begin{array}{r} 8898 \\ \times 1118 \\ \hline \end{array}$$

For getting right hand side of answer: same as adyordaskam process

$$\underline{(889 \times 111) + 8 \times 10^2 / 8 \times 8}$$

Hence answer of 8898 × 1118 is 9,947,964.

Conclusion: Mathematics is the base of all science but thought to be a hard nut to crack by many students because of the Unvoillingness attitude to change the monotonous, lengthy methods of Conventional Mathematics. Nowadays it is very common to hear about Vedic Mathematics. Even the parents are very much keen about to Vedic Mathematics to their children. Formulas of Vedic Mathematics describe the way the mind naturally works and therefore a great help in directing the student to the appropriate method of solution. Hence we can say that the Vedic Mathematics technique improves the speed of calculations. we think about to expansion and extending the Ekadhikena Purvena sutra in other forms.

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