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Vedic Mathematics: A Beautiful Art of Mental Calculation

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Abstract. Vedic Mathematics is a collection of elegant techniques for performing arithmetic quickly and efficiently. Popularized by Bharati Krishna Tirthaji, these methods emphasize mental calculation, pattern recognition, and simplicity. This article introduces a few key ideas from Vedic Mathematics in a manner accessible to K–12 students, illustrating how mathematics can be both powerful and enjoyable.

Keywords. Vedic Mathematics; Mental Calculation; K–12 Education; Arithmetic; Mathematical Patterns

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1. Introduction

Mathematics is often seen as a subject of rules and procedures. However, it can also be a subject of creativity, beauty, and insight. One remarkable example of this is *Vedic Mathematics*, a system that offers simple and clever methods for solving numerical problems.

Rather than relying heavily on long calculations, Vedic Mathematics encourages students to think in terms of patterns and relationships. This makes it especially appealing for young learners, as it builds confidence and mental agility.

2. What is Vedic Mathematics?

Vedic Mathematics is based on a set of principles, often called *sutras* (meaning "formulas" or "aphorisms"). These sutras provide shortcuts for performing calculations such as

- multiplication,
- division,

- squaring numbers, and
- finding complements.

The beauty of these methods lies in their simplicity: they often reduce complex problems to very short mental steps.

3. Examples of Vedic Techniques

3.1. Squaring Numbers Ending in 5

Example 3.1.1. To square a number ending in 5, multiply the leading digit or digits by the next integer, and then append 25.

For example, to compute 25^2, take the leading digit 2 and multiply it by the next integer:

$$2 \times 3 = 6.$$

Now append 25. Hence,

$$25^2 = 625.$$

Example 3.1.2. To compute 75^2, take the leading digit 7 and multiply it by the next integer:

$$7 \times 8 = 56.$$

Now append 25. Therefore,

$$75^2 = 5625.$$

3.2. Multiplying Numbers Close to 10

Example 3.2.1. Find 9×8.

Write each number relative to 10:

$$9 = 10 - 1, \qquad 8 = 10 - 2.$$

Subtract crosswise:

$$9 - 2 = 7 \qquad \text{(or equivalently } 8 - 1 = 7\text{)}.$$

Now multiply the deficits:

$$(-1)(-2) = 2.$$

Thus,

$$9 \times 8 = 72.$$

3.3. Multiplying Numbers Near 100

Example 3.3.1. Find 98×97.

Express each number relative to 100:

$$98 = 100 - 2, \qquad 97 = 100 - 3.$$

Subtract crosswise:

$$98 - 3 = 95 \qquad \text{(or equivalently } 97 - 2 = 95\text{)}.$$

Now multiply the deficits:

$$(-2)(-3) = 6.$$

Therefore,

$$98 \times 97 = 9506.$$

4. Why is Vedic Mathematics Useful?

Vedic Mathematics offers several benefits:

- It improves mental calculation skills.
- It speeds up arithmetic.
- It encourages pattern recognition.
- It builds confidence and enjoyment in mathematics.

For young students, these methods make mathematics feel like a puzzle or game rather than a burden.

5. A Simple Challenge for You

Example 5.1. Find 35^2.

Hint: Use the rule for numbers ending in 5.

6. An Additional Problem

Example 6.1. Try the multiplication

$$104 \times 109.$$

Write the numbers as

$$104 = 100 + 4, \qquad 109 = 100 + 9.$$

Add crosswise:

$$104 + 9 = 113 \qquad \text{(or equivalently } 109 + 4 = 113\text{)}.$$

Now multiply the excess parts:

$$4 \times 9 = 36.$$

Hence,

$$104 \times 109 = 11336.$$

7. Conclusion

Vedic Mathematics shows that mathematics is not only about computation but also about insight and creativity. By learning these techniques, students can develop a deeper appreciation for numbers and discover the joy of mathematical thinking.

As we explore mathematics from K–12 education to higher research, such elegant ideas remind us that even simple numbers can reveal profound beauty.

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Conflict of Interest

The author declares that there is no conflict of interest regarding the publication of this article.

Data Availability Statement

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References

[1] B. K. Tirthaji, *Vedic Mathematics*, Motilal Banarsidass, 1965.

[2] D. Bathia, *Vedic Mathematics Made Easy*, Jaico Publishing House.

[3] T. S. Henry and A. Agrawal, *The Mathematics of Vedic Sutras*, Motilal Banarsidass, 1998.