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## VEDIC MATHEMATICS: RAPID MENTAL CALCULATION

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### Introduction

The Vedic Math's is a super-fast method of doing calculations - just like we just to do in Mental Math's when we were kids! It provides simplified, short methods which give a very systematic method to us for calculating long operations in few seconds without the use of pen & paper or calculators! How many of us can perform  $998 \times 997$  mentally - leave apart doing that in few seconds! Well, Vedic math's teaches us exactly this. Here's how:

$\begin{array}{r} 7 \times 8 = 56 \\ 7 \quad 3 \text{ (3 is the difference from base)} \\ 8 \quad 2 \text{ (2 is the the difference from base)} \\ \hline \text{A} \quad \begin{array}{r} 7 \quad 3 \\ \times \quad \times \\ 8 \quad 2 \\ \hline 5 \end{array} \text{ starting at the left subtract crosswise either } 8-3 \text{ or } 7-2 \text{ to get 5, the first figure of the answer} \\ \text{B} \quad \begin{array}{r} 7 \quad 3 \\ \times \quad \times \\ 8 \quad 2 \\ \hline 5 \quad 6 \end{array} \text{ Multiply vertically to get 6} \end{array}$	<p><b>Similarly, try this now</b></p> $\left\{ \begin{array}{r} 997 \quad 3 \\ \times \quad \times \\ 998 \quad 2 \end{array} \right\}$ <p style="text-align: right;">↓</p> <hr/> $\begin{array}{r} 995 \quad 006 \end{array}$
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### History of Vedic math's-

**Vedic Mathematics** is the name given to a supposedly ancient system of calculation which was "rediscovered" from the Vedas between 1911 and 1918 by Sri Bharati Krsna Tirthaji (1884-1960). According to Tirthaji, all of Vedic mathematics is based on sixteen Sutras, or

word-formulae. For example, "Vertically and crosswise" is one of these Sutras. These formulae are proposed to describe the way the mind naturally works, and are therefore supposed to be a great help in directing the student to the appropriate method of solution. None of these sutras has ever been found in Vedic literature, nor are its methods consistent with known mathematical knowledge from the Vedic era. Possibly the most striking feature of the Tirthaji system is its rationality. The whole system is interrelated and unified: the general multiplication method, for example, is easily reversed to allow one-line divisions, and the simple squaring method can be reversed to give one-line square roots. And, these are all easily understood. This unifying quality is very satisfying, it makes arithmetic easy and enjoyable, and it encourages innovation. Difficult arithmetic problems and huge sums can often be solved immediately by Tirthaji's methods. These striking and beautiful methods are a part of a system of arithmetic which Tirthaji claims to be far more methodical than the modern system. "Vedic" Mathematics is said to manifest the coherent and unified structure of arithmetic, and its methods are complementary, direct and easy. The simplicity of the Tirthaji system means that calculations can be carried out mentally, though the methods can also be written down. There are many advantages in using a flexible, mental system. Pupils can invent their own methods; they are not limited to one method. This leads to more creative, interested and intelligent pupils. Interest in the Tirthaji's system is growing in education, where mathematics teachers are looking for something better and finding the Vedic system is the answer. The real beauty and effectiveness of the Tirthaji system cannot be fully cherished without practicing the system. One can then see why its enthusiasts claim that it is the most refined and efficient calculating system known.

### **What is Vedic Mathematics-**

"Vedic Mathematics" refers to a technique of calculation based on a set of 16 Sutras, or aphorisms, as algorithms and their up-sutras or corollaries derived from these Sutras. Its enthusiasts advance the claim that any mathematical problem can be solved mentally with these sutras.

### Tirthaji and the rediscovery of Vedic Mathematics-

The ancient system of Vedic Mathematics was rediscovered from the Indian Sanskrit texts known as the Vedas, between 1911 and 1918 by Sri Bharati Krishna Tirthaji (1884-1960). At the beginning of the twentieth century, when there was a great interest in the Sanskrit texts in Europe, Bharati Krishna tells us some scholars ridiculed certain texts which were headed 'Ganita Sutras'- which means mathematics. They could find no mathematics in the translation and dismissed the texts as rubbish. Bharati Krishna, who was himself a scholar of Sanskrit, Mathematics, History and Philosophy, studied these texts and after lengthy and careful exploration was able to reconstruct the mathematics of the Vedas. According to his research all of mathematics is based on [sixteen Sutras](#), or word-formulae. Bharati Krishna wrote sixteen volumes expounding the Vedic system but these were mysteriously lost and when the loss was confirmed in his final years he wrote a single book: Vedic Mathematics, currently available. It was published in 1965, five years after his death.

### Simple mental math's trick by using Vedic math's-

To multiply 52 and 11, imagine there is a space between 52

$52 * 11 = 5\_2$  (Put an imaginary space in between)

Now, what to do with that space?

Just add 5 and 2 and put the result in the imaginary space

So,  $52 * 11 = 572$  (which is your answer)

Isn't it great?

Let's try some more examples:

1)  $35 * 11 = 3 \underline{(3+5)} 5 = 385$

2)  $81 * 11 = 8 \underline{(8+1)} 1 = 891$

3)  $72 * 11 = 7 \underline{(7+2)} 2 = 792$  etc..

Let's take an example of this sum which has been taken from the 2010 question paper of a Popular Bank PO Examination (Aptitude Section):

**(Q) Is 456138 divisible by 9?**

Now, it only takes 2 seconds for you to determine the answer. But if you go by the traditional way then it will take you 10 seconds. So you can see the difference. Those 8 extra seconds you win, you can spend on other question. Isn't it?

No let see the solution

**(Answer)** To test whether a certain large number is divisible by 9 or not, **'just add all the digits of the number and if the end result is divisible by 9, then you can say that the entire large number will be divisible by 9 too'**.

$$4+5+6+1+3+8=27$$

Now since 27 are divisible by 9 so **456138 will be divisible by 9** too.

By now you must have some idea, how important it is to know these mental math's tricks. Knowing these simple calculation techniques gives you an advantage over others and can get you a job, get you crack any competitive exams and much more.

**Multiply any large number by 12 mentally in seconds**

To multiply any number by 12 just double last digit and thereafter double each digit and add it to its neighbor

For example  $21314 * 12 = 255768$

Let's break it into simple steps:

**Step 1:**  $021314 * 12 = \underline{\quad}8$  (Double of Last Digit  $4= 8$  )

**Step 2:**  $021314 * 12 = \underline{\quad}68$  (Now Double 1= 2, and add it to 4,  $2+4=6$ )

**Step 3:**  $021314 * 12= \underline{\quad}768$  (Now Double 3=6, and add it to 1,  $6+1=7$ )

**Step 4:**  $021314 * 12= \underline{\quad}5768$  (Now Double 1=2, and add it to 3,  $2+3=5$ )

**Step 5:**  $021314 * 12= \underline{\quad}55768$  (Now Double 2=4, and add it to 1,  $4+1=5$ )

**Step 6:**  $021314 * 12= \underline{\quad}255768$  (Now Double 0=0, and add it to 2,  $0+2=2$ )

So your final answer of  **$21314 * 12 = 255768$**

### **How Vedic Mathematics helps in increasing concentration-**

Vedic Mathematics is the actual Mathematics that we are studying. There we can find lots of technique of solving a particular problem in different ways. Vedic Mathematics also improves calculation power. There are many benefits of using Vedic Mathematics for solving problems. This system helps us to diminish finger counting and also helps a student to remember large amount of questions. Vedic mathematics helps us to reduce silly mistakes as this method is direct, simple and keeps the mind of student alert. Vedic Mathematics is a powerful tool through which we can enhance the calculation speed. One can learn Vedic Mathematics from an early age as this will help him or her to perform well in academics. Our brain is like a muscle. Just like other parts of our body require regular exercise, our brain requires it too.

The system of Vedic maths helps a person to utilize both parts of the brain – left and right hence keeping one active throughout his life time. Now let us understand how Vedic Mathematics helps in increasing concentration. When we practice Vedic Mathematics, we use both left and right brain; the left brain is responsible for the language and processes in a logical and sequential order while the right is more visual and processes intuitively, holistically, and randomly which boosts memory and concentration. Now since we are doing calculations mentally without using pen and paper, we are actually increasing our concentrating abilities.

### Advantages and Benefits of Vedic Mathematics-

- Vedic Mathematics is the world's fastest calculating system.
  - . It is 10 to 15 times faster than conventional system.
  - . Vedic Mathematics is a unique technique of calculations based on simple rules and principles with which any mathematical problem can be solved.
  - - This system makes calculations 10 to 15 times faster.
  - It helps in intelligent guessing. It improves mental calculations
  - . This system also increases concentration. It also boosts up the confidence of a student.

This system helps in removing the unnecessary burden by practicing the technique of Vedic mathematics one can reduce Math's phobia.

- This system makes Math's interesting. It helps in verification of answers.

### Vedic Mathematics is Helpful for students in competitive exam

Vedic Mathematics is very useful. One can solve even 14 digit calculations in seconds the system of Vedic Mathematics helps us to gain lightning speed in doing Mathematical calculations .It is very beneficial to the students preparing for entrance examinations as it increases the mental calculation and help us to calculate much faster as compared to conventional way of doing calculations. Vedic Mathematics is a different approach to solve Mathematical sums. This system is greatly helpful in competitive exams where one need to calculate really fast. Some more utility for the students are as follows-

- High Speed Vedic Mathematics is **10-15 times faster** than normal Math's.
- Better and Much **Improved Academic Performance** in school and **Instant Results**.
- **Sharpens** your mind, increases **mental agility** and intelligence.
- A Complete System comprising all the benefits of **Mental Math's**.

- Develops Left & Right Sides of the brains by increasing visualization and concentration abilities.
- Vedic Mathematics cultivates **an interest** for numbers and **eliminates the math-phobia** present in the students.
- Vedic Math's is easy to understand, easy to apply and easy to remember.
- **Increases** your **speed** and **accuracy**. Become a **Mental Calculator** yourself.
- Improves **memory** and boosts self confidence.

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