UNIT-I
VEDIC ARITHMETIC

MAHARAJA AGRASEN UNIVERSITY, BADDI (HP)

SUBJECT: VEDIC ARITHMETIC

SUBJECT CODE: BVAC-200

B.SC. NON-MEDICAL (II^{nd} SEM.)

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What is Vedic Arithmetic?

- Vedic Mathematics is the name given to the ancient system of mathematics which was rediscovered by vedas.

- It’s a unique technique of calculations based on the simple principles and rules, with which any mathematical problem – be it arithmetic, algebra, geometry or trigonometry can be solved mentally.

Why Vedic Mathematics?

- It helps a person to solve problems 10-15 times faster.
- It reduces burden (Need to learn tables up to nine only)
- It provides one line answer.
- It is a magical tool to reduce scratch work and finger counting.
- It increases concentration.
- Time saved can be used to answer more questions
- Improves concentration.
- Logical thinking process gets enhanced.

Base of Vedic Mathematics

- Vedic mathematics now refers to a set of sixteen formulae or sutras and their corollaries derived from vedas.

Sutra	Translation
एकाधिकेन पूर्वेन	By one more than the one before.
निखिलं नवतश्चरमं दशतः	All from 9 and the last from 10.
ळर्ध्वतिर्यग्भ्यामं	Vertically and Cross-wise
परावर्त्य योजयेत्	Transpose and Apply
शून्यं साम्यसमुच्चये	If the Samuccaya is the Same it is Zero
आनुरूप्ये शून्यं अन्यत्	If One is in Ratio the Other is Zero
संकलन व्यवकलनाभ्यां	By Addition and by Subtraction
पूरणापूरणाभ्यां	By the Completion or Non-Completion

EKADHIKENA PURVENA

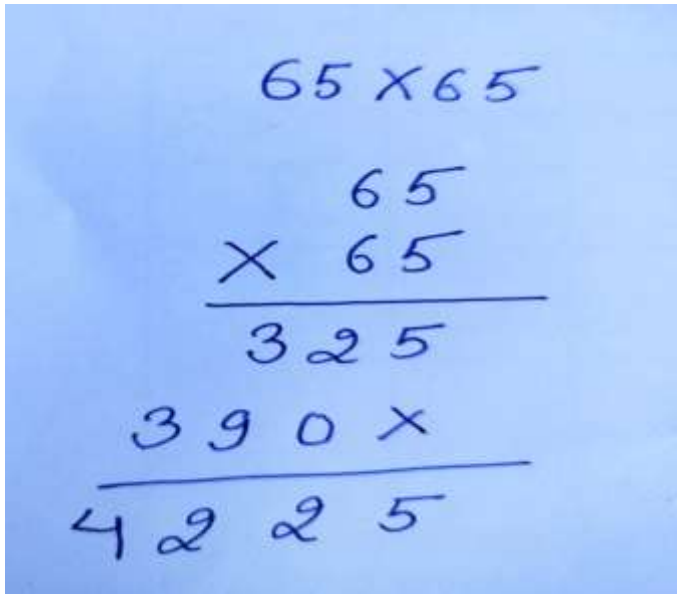
- The Sutra(formula) Ekadhikena Purvena means:

"By one more than the previous one".

- This Sutra is used to the 'Squaring of numbers ending in 5'.

“Squaring of numbers ending in 5”

❖ Conventional Method



❖ Vedic Method

$65 \times 65 = 4225$

(‘multiply the previous digit 6 by one more than itself 7. Then write 25)

NIKHILAM NAVATAS'CHARAMAM DASATAH

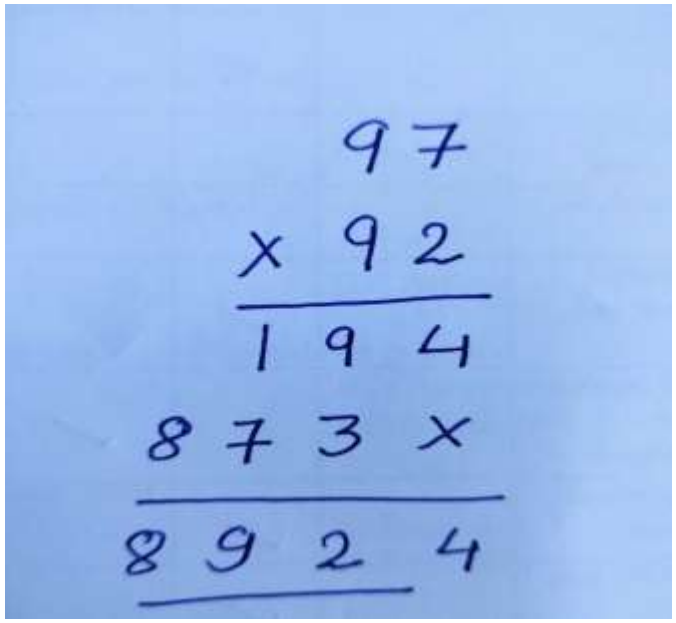
- The Sutra(formula) NIKHILAM NAVATAS'CHARAMAM DASATAH means:

  "all from 9 and the last from 10"

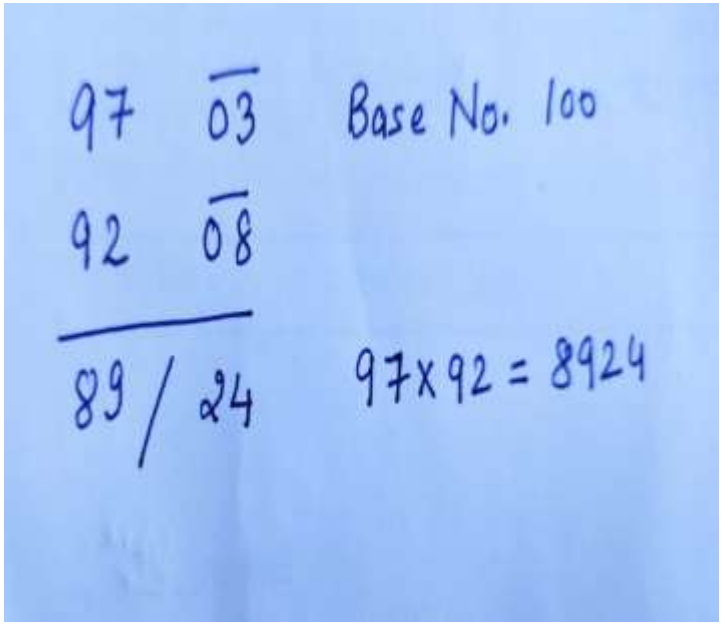
- This Sutra can be very effectively applied in multiplication of numbers, which are nearer to the bases like 10, 100, 1000 i.e., to the powers of 10 (eg: 96 ×98 or 102×104)

Case I: When both the numbers are lower than the base.

- Conventional Method

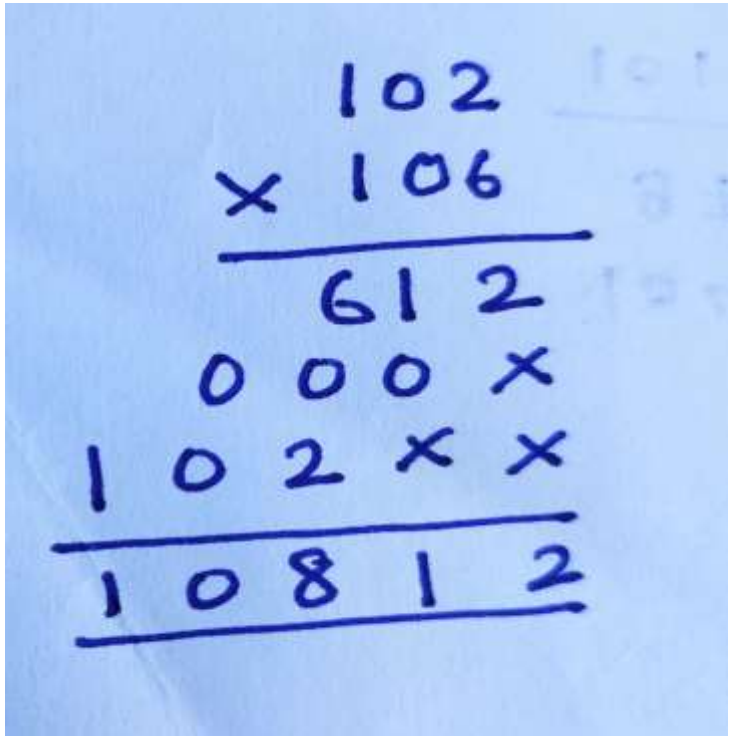


- Vedic Method

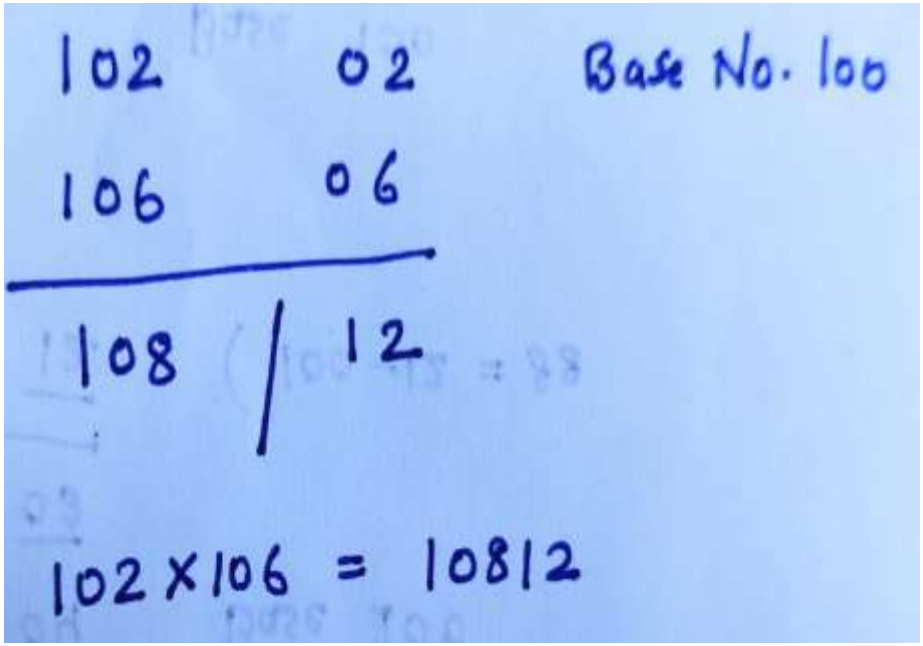


Case II: When both the numbers are higher than the base

❖ Conventional Method

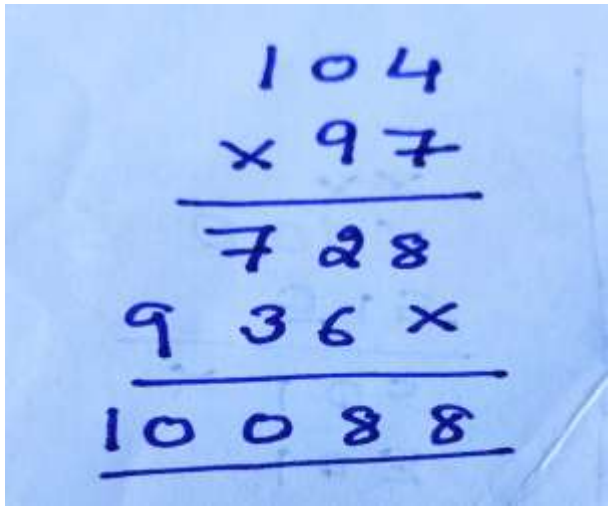


❖ Vedic Method



Case II: When one number is more and the other number is less than the base

- Conventional Method



- Vedic Method