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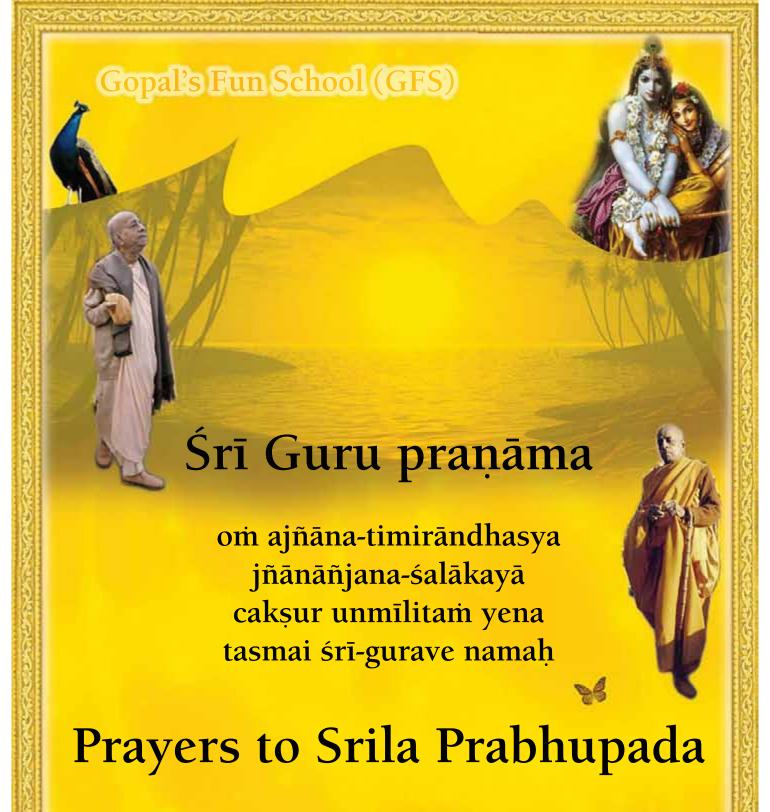
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nama om viṣṇu-pādāya kṛṣṇa-preṣṭhāya bhū-tale śrīmate bhaktivedānta-svāmin iti nāmine

namas te sārasvate deve gaura-vāṇī-pracāriņe nirviśeṣa-śūnyavādi-pāścātya-deśa-tāriņe



What is Vedic Mathematics?

The "Vedic Mathematics" is called so because of its origin from Vedas. To be more specific it has originated from "Atharva Vedas" the fourth Veda. "Atharva Veda" deals with the branches like Engineering, Mathematics, Sculpture, Medicine and all other sciences with which we are today aware of. Vedic Mathematics was rediscovered from the Vedas between 1911 and 1918 by Sri Bharati Krsna Tirthaji (1884-1960). According to his research all of mathematics is based on sixteen Sutras or word-formulae and thirteen sub-sutras. For example, 'Vertically and Crosswise' is one of these Sutras. These formulae describe the way the mind naturally works and are therefore a great help in directing the student to the appropriate method of solution.

Perhaps the most striking feature of the Vedic system is its coherence. Instead of a hotch-potch of unrelated techniques the whole system is beautifully 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 mathematics easy and enjoyable and encourages innovation.

In the Vedic system 'difficult' problems or huge sums can often be solved immediately by the Vedic method. These striking and beautiful methods are just a part of a complete system of mathematics which is far more systematic than the modern 'system'. Vedic Mathematics manifests the coherent and unified structure of mathematics and the methods are complementary, direct and easy.

The simplicity of Vedic Mathematics 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 the one 'correct' method. This leads to more creative, interested and intelligent pupils.

Interest in the Vedic system is growing in education where mathematics teachers are looking for something better and finding the Vedic system is the answer. Research is being carried out in many areas including the effects of learning Vedic Maths on children; developing new, powerful but easy applications of the Vedic Sutras in geometry, calculus, computing etc.

But the real beauty and effectiveness of Vedic Mathematics cannot be fully appreciated without actually practising the system. One can then see that it is perhaps the most refined and efficient mathematical system possible.

The Sixteen Main Sutras

- 1. By one more than the one before.
- 2. All from 9 and the last from 10.
- 3. Vertically and Cross-wise
- 4. Transpose and Apply
- 5. If the Samuccaya is the Same it is Zero
- 6. If One is in Ratio the Other is Zero
- 7. By Addition and by Subtraction
- 8. By the Completion or Non-Completion
- 9. Differential Calculus
- 10. By the Deficiency
- 11. Specific and General
- 12. The Remainders by the Last Digit
- 13. The Ultimate and Twice the Penultimate
- 14. By One Less than the One Before
- 15. The Product of the Sum
- 16. All the Multipliers

The Thirteen Sub Sutras

- 1. Proportionately
- 2. The Remainder Remains Constant
- 3. The First by the First and the Last by the Last
- 4. For 7 the Multiplicand is 143
- 5. By Osculation
- 6. Lessen by the Deficiency
- 7. Whatever the Deficiency lessen by that amount and set up the Square of the Deficiency
- 8. Last Totalling 10
- 9. Only the Last Terms
- 10. The Sum of the Products
- 11. By Alternative Elimination and Retention
- 12. By Mere Observation
- 13. The Product of the Sum is the Sum of the Products

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1. Mutilpication Base 10 - Nikhilam

Session I

C. One number more than 10 and one less than 10

7 x 12 9 x 13

6 x 14

6 x 13 8 x 18

9 x 13

7 x 14 6 x 16

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1. Mutilpication Base 10 - Nikhilam

Session I

B. Both numbers less than 10

7 x 8 9 x 8 6 x 8

6 x 7 8 x 8 9 x 9

7 x 9 6 x 6

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1. Mutilpication Base 10 - Nikhilam

Session I

A. Both numbers more than 10

12 x 13 14 x 12 12 x 11

16 x 13 17 x 14 16 x 15

12 x 18 14 x 16

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1. Multiplication Base 100 - Nikhilam

Session II

A. Both numbers more than 100

102 x 105 104 x 102 102 x 107

106 x 103 109 x 104

107 x 105

101 x 112 104 x 106

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1. Multiplication Base 100 - Nikhilam

Session II

B. Both numbers less than 100

97 x 98 99 x 98

96 x 98

92 x 97 94 x 95 99 x 99

97 x 91 96 x 92

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1. Multiplication Base 100 - Nikhilam

Session II

C. One number more than 100 and one less than 100

97 x 102 99 x 103

96 x 104

96 x 103 99 x 104

97 x 105

91 x 112 94 x 106

2. Multiplication Base 50 - Nikhilam

Session II

57 x 52 53 x 54 51 x 55

48 x 49 47 x 46

vedic mathe Gopal's Fun School 3. Multiplication Base 20 - Nikhilam Session II 22 23 21 x 26 x 25 x 24 18 17 x 19 x 18

2. Addition - Dot Method

Session III

 $1235 \\ 4568 \\ 2896 \\ +2575$

2. Addition - Dot Method

Session III

 $5347 \\ 1755 \\ 6647 \\ +6478$

1 7 2 1 3 2 2 6 1 3 3 5 + 3 2 4 4

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2. Subtraction – Compliment Method

Session IV

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2. Subtraction – Compliment Method

Session IV

10000

10000

1 0 0 0 0 - 8 8 9 7

1 4 6 - 6 9 1 3 2 - 6 6 1 4 5 - 6 9

1 2 4

2 6 4 - 3 9 1 2 8 - 4 6

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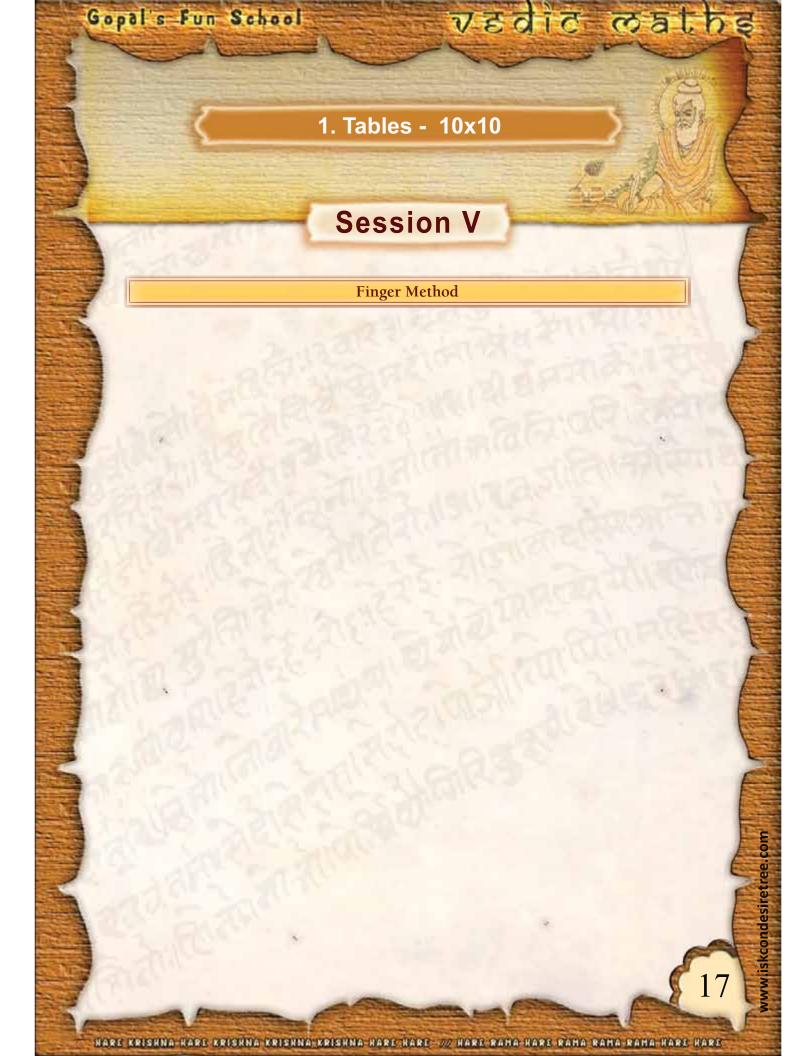
2. Subtraction – Compliment Method

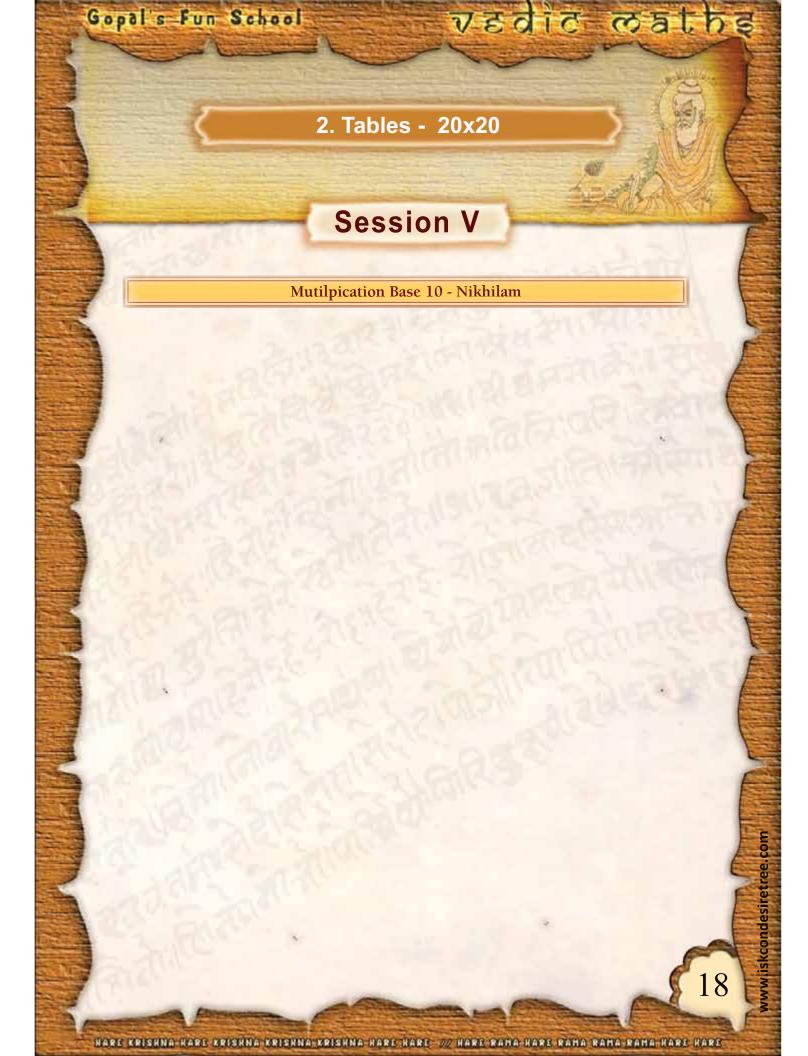
Session IV

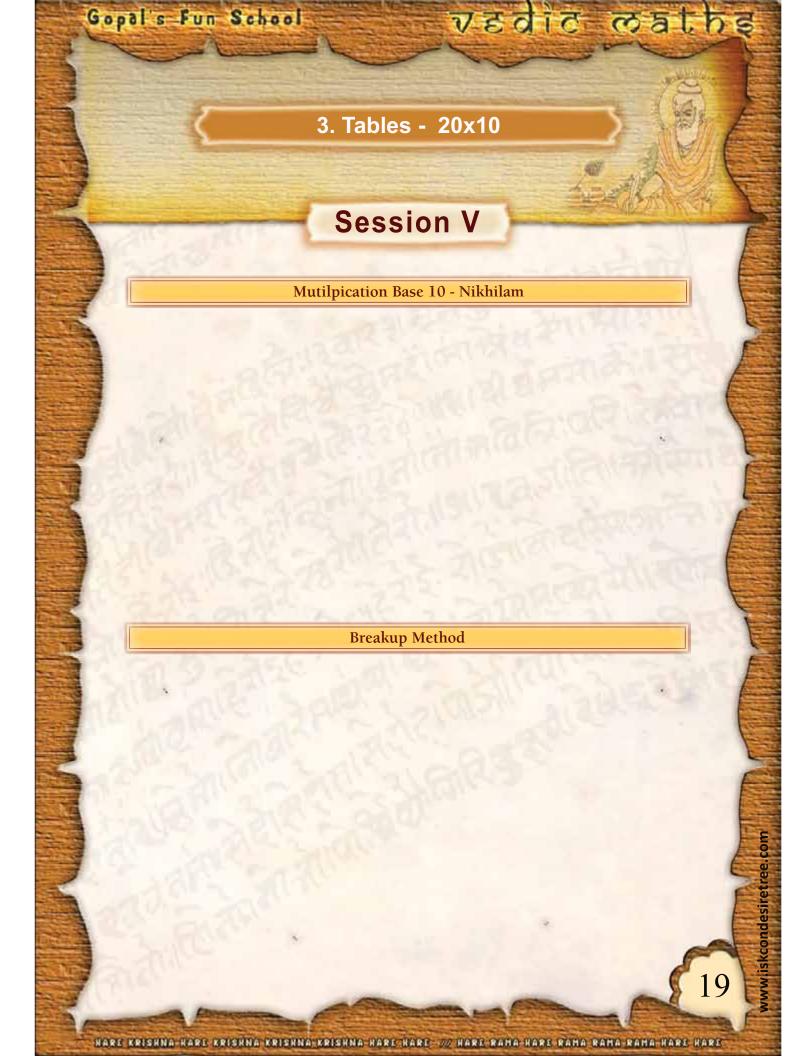
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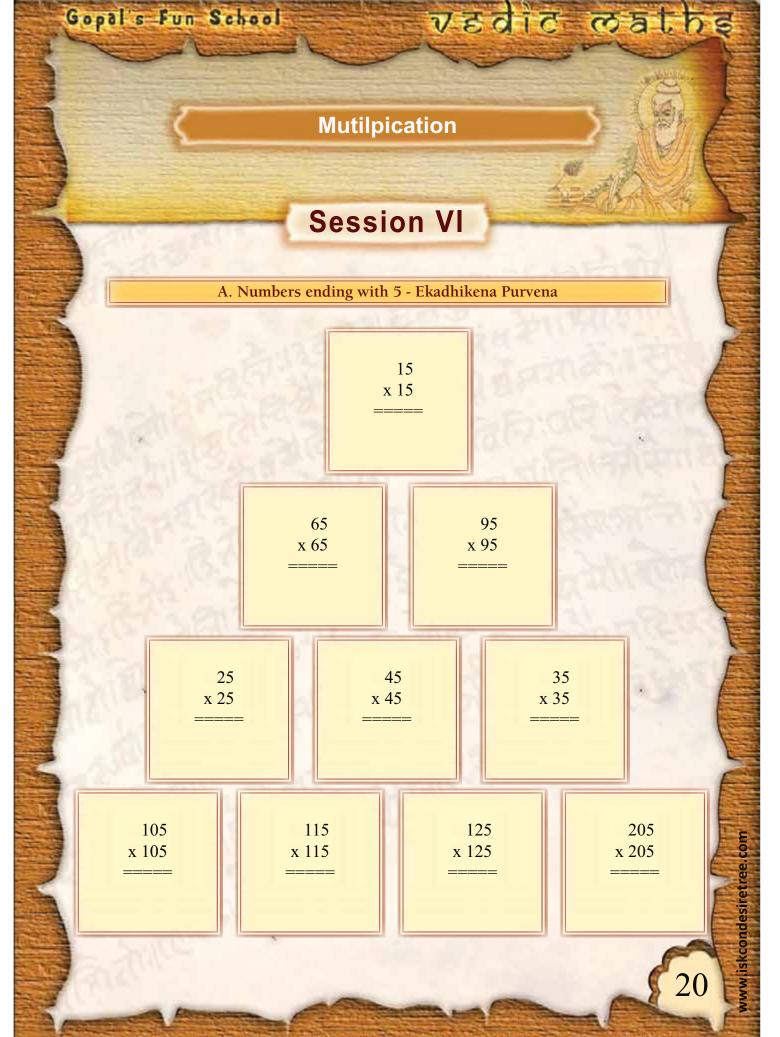
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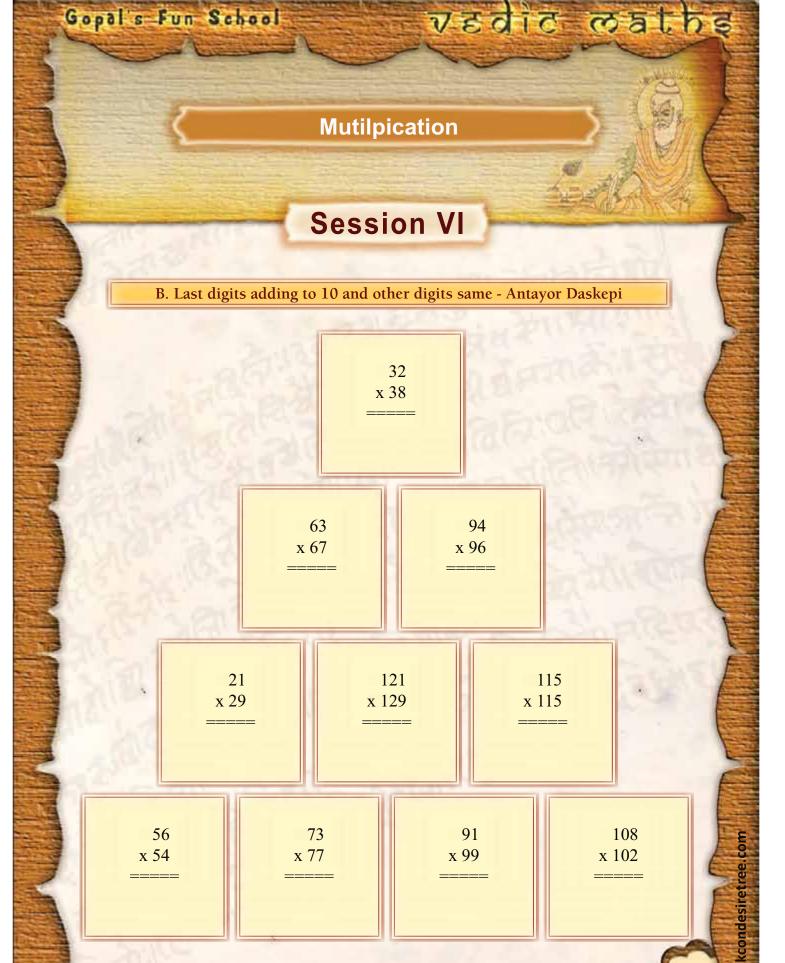
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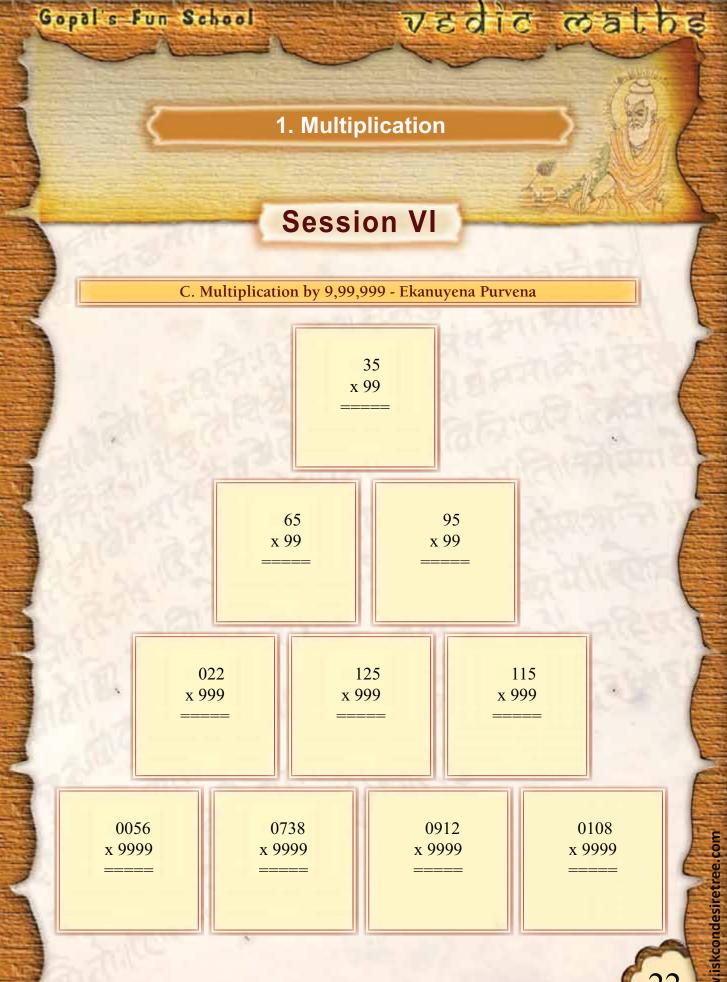












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1. Multiplication

Session VI

D. Multiplication by 11

54 x 11 24 x 11 123 x 11

5876 x 11 239 x 11 456 x 11 999 x 11

12345 x 11 654878 x 11 589765 x 11

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1. Multiplication – Urdhva Triyaghyam

Session VII

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1. Multiplication – Urdhva Triyaghyam

Session VII

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2. Mixed Multiplication Practice

Session VII

1 2 8 x 1 2 2

78 x999 1 4 5 x 1 1

123 x456 7 8 6 x 1 2 8 3 2 4 x 1 8 0

2 1 x 2 9 8 6 x 1 4

787 x9999 5 6 7 x 1 1

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2. Mixed Multiplication Practice

Session VII

21 x 11 32 x 99 51 x 59 25 x 25

21 x 43 324 x 11

513 x 999 250 x 540

0973 x 9999

64 x 58 72 x 78 85 x 85

1. Division – By method of deviation

Session VIII

$$Q =$$

$$R =$$

$$Q =$$

$$R =$$

$$Q =$$

$$R =$$

$$27/9 =$$

$$Q =$$

$$R =$$

$$83/9 =$$

$$Q =$$

$$R =$$

$$65/9 =$$

$$Q =$$

$$R =$$

$$Q = R =$$

1. Division – By method of deviation

Session VIII

$$Q = R =$$

$$=$$
 $R =$

$$Q =$$

$$R =$$

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2. Squares - Yavdunam Tavdunam

Session VIII

mahā-prasāde govinde nāma-brahmaṇi vaiṣṇave svalpa-puṇya-vatām rājan viśvāso naiva jāyate śarīra avidyā-jāl, joḍendriya tāhe kāl, jīve phele viṣaya-sāgore tā'ra madhye jihvā ati, lobhamoy sudurmati, tā'ke jetā kaṭhina samsāre kṛṣṇa baḍo doyāmay, karibāre jihvā jay, sva-prasād-anna dila bhāi sei annāmṛta pāo, rādhā-kṛṣṇa-guṇa gāo, preme ḍāko caitanya-nitāi

O king, for those with little pious credit, faith in mahā-prasāda, Śrī Govinda, the holy name, and the Vaiṣṇavas never arises.

O Lord, this material body is a place of ignorance, and the senses are a network of paths leading to death. Somehow we have fallen into this ocean of material sense enjoyment, and of all the senses the tongue is the most voracious and uncontrollable. It is very difficult to conquer the tongue in this world. But You, dear Kṛṣṇa, are very kind to us and have given us such nice prasādam just to control the tongue. Now we take this prasādam to our full satisfaction and glorify You-Śrī Śrī Rādhā and Kṛṣṇa-and in love call for the help of Lord Caitanya and Nityānanda.