

Multiplication of two digit numbers with Urdhra-Tiryaghbyam Sutra.

For example: 14*13

Step I : Multiply 14×13

Step II : Multiply the left hand digits of both the numbers and write in the left hand side. Multiply the right hand digits and write in the right hand side.

L.H.S.

$$\begin{aligned} 1 \times 1 \\ = 1 \end{aligned}$$

R.H.S.

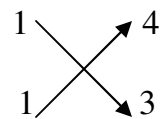
$$\begin{aligned} 4 \times 3 \\ = 12 \end{aligned}$$

Step III : Cross multiply the digits and add the two products. Write the sum in middle.

L.H.S.

$$\begin{aligned} 1 \\ 13 \end{aligned}$$

Middle Term



R.H.S.

$$12$$

$$\begin{aligned} &= 1 \times 3 + 4 \times 1 \\ &= 3 + 4 \\ &= 7 \end{aligned}$$

Step IV : From R.H.S. the left most digit will be the carry.

L.H.S.

$$1$$

Middle Term

$$7$$

R.H.S.

$$2 \text{ (1 carry)}$$

Step V : Add carry to the middle term. L.H.S., middle term and R.H.S. will make the term.

L.H.S.

$$1$$

Middle Term

$$7+1=8$$

R.H.S.

$$2$$

Result = 182

Example :

Step I : Multiply 62×75

Step II : L.H.S. R.H.S.

$$\begin{array}{r} 6 \times 7 \quad 2 \times 5 \\ = 42 = 10 \end{array}$$

Step III : L.H.S. Middle Term R.H.S.

$$\begin{array}{r} 42 \quad 6 \quad 2 \quad 10 \\ 7 \quad 5 \\ = 6 \times 5 + 2 \times 7 \\ = 30 + 14 \\ = 44 \end{array}$$

Step IV : L.H.S. Middle Term R.H.S.

$$\begin{array}{r} 42 \quad 44 + 1 \quad 0 \quad (1 \text{ carry}) \\ = 45 \\ 42 + 4 \quad 5 \quad (4 \text{ carry}) \quad 0 \\ = 46 \quad 5 \quad 0 \\ \text{Result} = 4650 \end{array}$$