

# VEDIC MATHS

## Multiplication by 5, 25, 125

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- Write 5 in terms of 10 i.e.  $\frac{10}{2} = 5$

So eg  $8 \times 5$   
 $8 \times 10 = 80$   
 $\frac{80}{2} = 40$

$8 \times 25 = \frac{8}{4} \times 100 = 200$

eg  $8 \times 125$   $(\frac{5}{2})^3$   
 $8 \times 1000 = 8000$   
 $\frac{8000}{8} = 1000$

Q)  $37 \times 25 = 925$  ,  $147 \times 25 = 3675$  ,  $122 \times 125 = 15250$  ,  $256 \times 125 = 32000$   
 Sol

## Multiplication by 11

$23 \times 11$   
 $\begin{array}{r} 23 \\ + 23 \\ \hline 253 \end{array}$

$87 \times 11$   
 $\begin{array}{r} 87 \\ + 87 \\ \hline 957 \end{array}$

$123 \times 11$  (Addition upto 2 digits only)  
 $\begin{array}{r} 123 \\ + 123 \\ \hline 1353 \end{array}$

$123 \times 111$   
 $\begin{array}{r} 123 \\ + 1230 \\ + 12300 \\ \hline 13653 \end{array}$

$123 \times 11 = 123(10+1)$   
 $\begin{array}{r} 1230 \\ + 123 \\ \hline 1353 \end{array}$

111 as  $(100+10+1)$

Q)  $79 \times 11$   
 $869$

Q)  $123 \times 11$   
 $1353$



$$(Q) 249 \times 11$$

$$2 \quad 7 \quad 39$$

$$(Q) 849 \times 11$$

$$893 \quad 39$$

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MULTIPLICATION By 9,99,999

Rule - No. of digits should be same  
 (1) Sub 1 from no.

$$\begin{array}{r} 8 \times 9 \\ - 1 \\ \hline 72 \end{array}$$

$$\begin{array}{r} 72 \\ - 1 \\ \hline 71 \quad 28 \end{array}$$

$$\begin{array}{r} 643 \times 999 \\ - 1 \\ \hline 642 \quad 357 \end{array}$$

$$\begin{array}{r} 043 \times 999 \\ - 1 \\ \hline 042 \quad 957 \end{array}$$

$$\begin{array}{r} (Q) \quad 257 \times 9 \\ (10-1) \\ 2570 \\ \underline{257} \\ 2313 \end{array}$$

$$\begin{array}{r} (Q) \quad 58 \times 99 \\ 5742 \end{array}$$

2 DIGIT MULTIPLICATION

$$\begin{array}{r} 23 \\ \times 12 \\ \hline 276 \end{array}$$

$$\begin{array}{r} 23 \\ \times 15 \\ \hline 345 \end{array}$$

$$\begin{array}{r} (Q) \quad 86 \\ \times 47 \\ \hline 4042 \end{array}$$

$$(Q) \quad 42 \times 48$$



Rule - If sum of unit digits are coming out to be 10 and other digits are same

Successor  

$$\begin{array}{r} 5 \xleftarrow{+1} 4 \quad 2 \\ 4 \quad 8 \end{array} \times \text{Multiply}$$

$$\underline{20 \quad 16}$$

Q) 
$$\begin{array}{r} 53 \\ 57 \\ \hline 3021 \end{array}$$

Q) 
$$\begin{array}{r} 66 \\ \times 64 \\ \hline 4224 \end{array}$$

Q) 
$$\begin{array}{r} 55 \\ 55 \\ \hline 3025 \end{array}$$

Q) 
$$\begin{array}{r} 41 \\ 49 \\ \hline 2009 \end{array}$$

Q) 
$$\begin{array}{r} 112 \\ \times 118 \\ \hline 13216 \end{array}$$

## SQUARE

Base Value Method

$(44)^2$

Base = ~~50~~ 40

$$(44 + 4)^2 = 40 + 4^2$$
  
greater or less      Base      greater or less

1936

(45) Above method unit digit sum as 10

2025

Q)  $(46)^2$   
 $(40 + 6)^2 = 40 + 36$   
 $1600 + 240 + 36$   
 $2376$

Q)  $(396)^2$   
 $156816$

Q)  $(112)^2$   
 $12544$