

**Arithmetics**  
**Multiplication base 10**  
**[calculator-algebra.org](http://calculator-algebra.org)**

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## Example

Multiply the one-digit numbers.

$$3 \cdot 2 = 6$$

$$4 \cdot 3 = 12$$

$$0 \cdot 8 = 0$$

$$6 \cdot 7 = 42$$

$$7 \cdot 9 = 63$$

## Example

Multiply the one-digit numbers.

$$9 \cdot 1 = 9$$

$$8 \cdot 4 = 32$$

$$7 \cdot 7 = 49$$

$$6 \cdot 9 = 54$$

.	0	1	2	3	4	5	6	7	8	9
0	0	0	0	0	0	0	0	0	0	0
1	0	1	2	3	4	5	6	7	8	9
2	0	2	4	6	8	10	12	14	16	18
3	0	3	6	9	12	15	18	21	24	27
4	0	4	8	12	16	20	24	28	32	36
5	0	5	10	15	20	25	30	35	40	45
6	0	6	12	18	24	30	36	42	48	54
7	0	7	14	21	28	35	42	49	56	63
8	0	8	16	24	32	40	48	56	64	72
9	0	9	18	27	36	45	54	63	72	81

- To do one-digit multiplication quickly: make table with all possibilities.

## Example

Multiply the one-digit numbers.

$$2 \cdot 10 = 20$$

$$40 \cdot 4 = 160$$

$$70 \cdot 50 = 3500$$

$$30 \cdot 900 = 27000$$

## Observation

*To multiply numbers that end with zeroes:*

- *multiply the non-zero parts ignoring all zeroes at the end;*
- *copy all ending zeroes ignored in the previous step.*

## Example

Multiply 3 by 312.

$$\begin{array}{r} 3 \cdot 312 \\ \hline 936 \end{array}$$

## Example

Multiply 6 by 9127.

$$\begin{array}{r} 6 \cdot 9127 \\ \hline 54762 \end{array}$$

## Example

Multiply 11 by 12.

$$\begin{array}{r} 11 \cdot 12 \\ \hline 12 \\ + 12 \\ \hline 132 \end{array}$$

## Example

Multiply 39 by 33.

$$\begin{array}{r} 39 \cdot 33 \\ \hline \phantom{0} 11 \\ + \phantom{0} 297 \\ \hline 1287 \end{array}$$



## Example

Multiply 30 by 88.

$$\begin{array}{r} 30 \cdot 88 \\ \hline 00 \\ + 264 \\ \hline 2640 \end{array}$$

Multiply 3 by 88.

$$\begin{array}{r} 3 \cdot 88 \\ \hline 264 \end{array}$$

## Example

Multiply 307 by 804.

$$\begin{array}{r} 307 \cdot 804 \\ \hline 5628 \\ + \quad 000 \\ 2412 \\ \hline 246828 \end{array}$$

## Example

Multiply 456 by 987.

$$\begin{array}{r} 456 \cdot 987 \\ \hline \phantom{456} 1 \phantom{00} 2 \phantom{00} 2 \\ \phantom{456} 5922 \\ + \phantom{456} 4935 \\ \phantom{456} 3948 \\ \hline 450072 \end{array}$$