

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

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## Example

Multiply the one-digit numbers.

$$3 \cdot 2 =$$

$$4 \cdot 3 =$$

$$0 \cdot 8 =$$

$$6 \cdot 7 =$$

$$7 \cdot 9 =$$

## Example

Multiply the one-digit numbers.

$$3 \cdot 2 = ?$$

$$4 \cdot 3 =$$

$$0 \cdot 8 =$$

$$6 \cdot 7 =$$

$$7 \cdot 9 =$$

## Example

Multiply the one-digit numbers.

$$3 \cdot 2 = 6$$

$$4 \cdot 3 =$$

$$0 \cdot 8 =$$

$$6 \cdot 7 =$$

$$7 \cdot 9 =$$

## Example

Multiply the one-digit numbers.

$$3 \cdot 2 = 6$$

$$4 \cdot 3 = ?$$

$$0 \cdot 8 =$$

$$6 \cdot 7 =$$

$$7 \cdot 9 =$$

## Example

Multiply the one-digit numbers.

$$3 \cdot 2 = 6$$

$$4 \cdot 3 = 12$$

$$0 \cdot 8 =$$

$$6 \cdot 7 =$$

$$7 \cdot 9 =$$

## Example

Multiply the one-digit numbers.

$$3 \cdot 2 = 6$$

$$4 \cdot 3 = 12$$

$$0 \cdot 8 = ?$$

$$6 \cdot 7 =$$

$$7 \cdot 9 =$$

## Example

Multiply the one-digit numbers.

$$3 \cdot 2 = 6$$

$$4 \cdot 3 = 12$$

$$0 \cdot 8 = 0$$

$$6 \cdot 7 =$$

$$7 \cdot 9 =$$



## Example

Multiply the one-digit numbers.

$$3 \cdot 2 = 6$$

$$4 \cdot 3 = 12$$

$$0 \cdot 8 = 0$$

$$6 \cdot 7 = ?$$

$$7 \cdot 9 =$$

## Example

Multiply the one-digit numbers.

$$3 \cdot 2 = 6$$

$$4 \cdot 3 = 12$$

$$0 \cdot 8 = 0$$

$$6 \cdot 7 = 42$$

$$7 \cdot 9 =$$

## Example

Multiply the one-digit numbers.

$$3 \cdot 2 = 6$$

$$4 \cdot 3 = 12$$

$$0 \cdot 8 = 0$$

$$6 \cdot 7 = 42$$

$$7 \cdot 9 = ?$$

## 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.

$$9 \cdot 1 =$$

$$8 \cdot 4 =$$

$$7 \cdot 7 =$$

$$6 \cdot 9 =$$

## Example

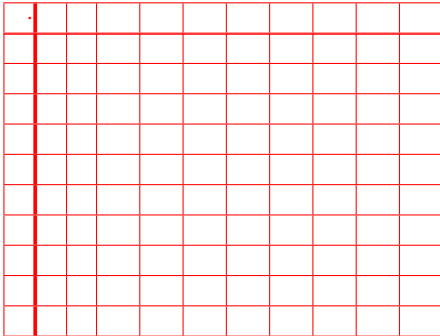
Multiply the one-digit numbers.

$$9 \cdot 1 =$$

$$8 \cdot 4 =$$

$$7 \cdot 7 =$$

$$6 \cdot 9 =$$



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

## Example

Multiply the one-digit numbers.

$$9 \cdot 1 = ?$$

$$8 \cdot 4 =$$

$$7 \cdot 7 =$$

$$6 \cdot 9 =$$

.	1								
9	?								

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

## Example

Multiply the one-digit numbers.

$$9 \cdot 1 = 9$$

$$8 \cdot 4 =$$

$$7 \cdot 7 =$$

$$6 \cdot 9 =$$

.	1								
9	9								

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



## Example

Multiply the one-digit numbers.

$$9 \cdot 1 = 9$$

$$8 \cdot 4 = ?$$

$$7 \cdot 7 =$$

$$6 \cdot 9 =$$

.	1			4					
8				?					
9	9								

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

## Example

Multiply the one-digit numbers.

$$9 \cdot 1 = 9$$

$$8 \cdot 4 = 32$$

$$7 \cdot 7 =$$

$$6 \cdot 9 =$$

.	1			4					
8				32					
9	9								

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

## Example

Multiply the one-digit numbers.

$$9 \cdot 1 = 9$$

$$8 \cdot 4 = 32$$

$$7 \cdot 7 = ?$$

$$6 \cdot 9 =$$

.	1		4		7	
7					?	
8			32			
9	9					

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

## Example

Multiply the one-digit numbers.

$$9 \cdot 1 = 9$$

$$8 \cdot 4 = 32$$

$$7 \cdot 7 = 49$$

$$6 \cdot 9 =$$

.	1			4			7		
7							49		
8				32					
9	9								

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

## Example

Multiply the one-digit numbers.

$$9 \cdot 1 = 9$$

$$8 \cdot 4 = 32$$

$$7 \cdot 7 = 49$$

$$6 \cdot 9 = ?$$

.	1		4		7		9
6							?
7					49		
8			32				
9	9						

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

## Example

Multiply the one-digit numbers.

$$9 \cdot 1 = 9$$

$$8 \cdot 4 = 32$$

$$7 \cdot 7 = 49$$

$$6 \cdot 9 = 54$$

.	1		4		7		9
6							54
7					49		
8			32				
9	9						

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

## Example

Multiply the one-digit numbers.

$$9 \cdot 1 = 9$$

$$8 \cdot 4 = 32$$

$$7 \cdot 7 = 49$$

$$6 \cdot 9 = 54$$

.	?	1	?	?	4	?	?	7	?	9
?	?	?	?	?	?	?	?	?	?	?
?	?	?	?	?	?	?	?	?	?	?
?	?	?	?	?	?	?	?	?	?	?
?	?	?	?	?	?	?	?	?	?	?
?	?	?	?	?	?	?	?	?	?	?
?	?	?	?	?	?	?	?	?	?	?
6	?	?	?	?	?	?	?	?	?	54
7	?	?	?	?	?	?	?	49	?	?
8	?	?	?	?	32	?	?	?	?	?
9	?	9	?	?	?	?	?	?	?	?

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

## 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.

$$2 \cdot 10 =$$

$$40 \cdot 4 =$$

$$70 \cdot 50 =$$

$$30 \cdot 900 =$$

## Example

Multiply the one-digit numbers.

$$2 \cdot 10 = ?$$

$$40 \cdot 4 =$$

$$70 \cdot 50 =$$

$$30 \cdot 900 =$$

## Example

Multiply the one-digit numbers.

$$2 \cdot 10 = 20$$

$$40 \cdot 4 =$$

$$70 \cdot 50 =$$

$$30 \cdot 900 =$$

## Example

Multiply the one-digit numbers.

$$2 \cdot 10 = 20$$

$$40 \cdot 4 = ?$$

$$70 \cdot 50 =$$

$$30 \cdot 900 =$$

## Example

Multiply the one-digit numbers.

$$2 \cdot 10 = 20$$

$$40 \cdot 4 = 160$$

$$70 \cdot 50 =$$

$$30 \cdot 900 =$$

## Example

Multiply the one-digit numbers.

$$2 \cdot 10 = 20$$

$$40 \cdot 4 = 160$$

$$70 \cdot 50 = ?$$

$$30 \cdot 900 =$$

## Example

Multiply the one-digit numbers.

$$2 \cdot 10 = 20$$

$$40 \cdot 4 = 160$$

$$70 \cdot 50 = 3500$$

$$30 \cdot 900 =$$

## Example

Multiply the one-digit numbers.

$$2 \cdot 10 = 20$$

$$40 \cdot 4 = 160$$

$$70 \cdot 50 = 3500$$

$$30 \cdot 900 = ?$$



## Example

Multiply the one-digit numbers.

$$2 \cdot 10 = 20$$

$$40 \cdot 4 = 160$$

$$70 \cdot 50 = 3500$$

$$30 \cdot 900 = 27000$$

## 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:*

## 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;*

## 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.

## Example

Multiply 3 by 312.

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

## Example

Multiply 3 by 312.

$$\underline{3 \cdot 312}$$

## Example

Multiply 3 by 312.

$$\begin{array}{r} 3 \cdot 312 \\ \hline \phantom{00} ? \end{array}$$

$$3 \cdot 2 = ?$$



## Example

Multiply 3 by 312.

$$\begin{array}{r} 3 \cdot 312 \\ \hline 6 \end{array}$$

$$3 \cdot 2 = 6$$

## Example

Multiply 3 by 312.

$$\begin{array}{r} 3 \cdot 312 \\ \hline \phantom{00}6 \end{array}$$

$$3 \cdot 2 = 6$$

## Example

Multiply 3 by 312.

$$\begin{array}{r} 3 \cdot 312 \\ \hline \phantom{3} ?6 \end{array}$$

$$3 \cdot 1 = ?$$

## Example

Multiply 3 by 312.

$$\begin{array}{r} 3 \cdot 312 \\ \hline 36 \end{array}$$

$$3 \cdot 1 = 3$$

## Example

Multiply 3 by 312.

$$\begin{array}{r} 3 \cdot 312 \\ \hline 36 \end{array}$$

$$3 \cdot 1 = 3$$

## Example

Multiply 3 by 312.

$$\begin{array}{r} 3 \cdot 312 \\ \hline ?36 \end{array}$$

$$3 \cdot 3 = ?$$

## Example

Multiply 3 by 312.

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

$$3 \cdot 3 = 9$$

## Example

Multiply 3 by 312.

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

$$3 \cdot 3 = 9$$



## Example

Multiply 3 by 312.

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

## Example

Multiply 3 by 312.

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

## Example

Multiply 6 by 9127.

## Example

Multiply 6 by 9127.

$$\underline{6 \cdot 9127}$$

## Example

Multiply 6 by 9127.

$$\underline{6 \cdot 9127}$$

## Example

Multiply 6 by 9127.

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

?

$$6 \cdot 7 = ?$$

## Example

Multiply 6 by 9127.

$$\begin{array}{r} 6 \cdot 9127 \\ \hline 2 \end{array}$$

$$6 \cdot 7 = 42$$

## Example

Multiply 6 by 9127.

$$\begin{array}{r} \phantom{6 \cdot} 9127 \\ \phantom{6 \cdot} \times 6 \\ \hline \phantom{6 \cdot} 5482 \end{array}$$

$$6 \cdot 7 = 42$$



## Example

Multiply 6 by 9127.

$$\begin{array}{r} 6 \cdot 9127 \\ \hline 2 \end{array}$$

$$6 \cdot 7 = 42$$

## Example

Multiply 6 by 9127.

$$\begin{array}{r} \phantom{6 \cdot 91} \overset{4}{2}7 \\ 6 \cdot 91\cancel{2}7 \\ \hline \phantom{6 \cdot 91} \overset{4}{?}2 \end{array}$$

$$6 \cdot 2 + 4 = \quad ?$$

## Example

Multiply 6 by 9127.

$$\begin{array}{r} 14 \\ 6 \cdot 9127 \\ \hline 62 \end{array}$$

$$6 \cdot 2 + 4 = 12 + 4 = 16$$

## Example

Multiply 6 by 9127.

$$\begin{array}{r} \phantom{0} 1 \phantom{0} 4 \\ 6 \cdot 9127 \\ \hline \phantom{000} 62 \end{array}$$

$$6 \cdot 2 + 4 = 12 + 4 = 16$$



## Example

Multiply 6 by 9127.

$$\begin{array}{r} 14 \\ 6 \cdot 9127 \\ \hline \quad ?62 \end{array}$$

$$6 \cdot 1 + 1 = ?$$

## Example

Multiply 6 by 9127.

$$\begin{array}{r} 14 \\ 6 \cdot 9127 \\ \hline 762 \end{array}$$

$$6 \cdot 1 + 1 = 7$$

## Example

Multiply 6 by 9127.

$$\begin{array}{r} \phantom{6 \cdot 9} 1 \phantom{4} \\ 6 \cdot 9127 \\ \hline \phantom{6 \cdot 9} 762 \end{array}$$

$$6 \cdot 1 + 1 = 7$$



## Example

Multiply 6 by 9127.

$$\begin{array}{r} 14 \\ 6 \cdot 9127 \\ \hline ?762 \end{array}$$

$$6 \cdot 9 = ?$$

## Example

Multiply 6 by 9127.

$$\begin{array}{r} 5 \quad 1 \quad 4 \\ 6 \cdot 9127 \\ \hline 4762 \end{array}$$

$$6 \cdot 9 = 54$$

## Example

Multiply 6 by 9127.

$$\begin{array}{r} 5 \quad 1 \quad 4 \\ 6 \cdot 9127 \\ \hline 4762 \end{array}$$

$$6 \cdot 9 = 54$$

## Example

Multiply 6 by 9127.

$$\begin{array}{r} \phantom{6 \cdot} \overset{5}{9} \overset{1}{1} \overset{4}{2} 7 \\ 6 \cdot \phantom{0000} \\ \hline 4762 \end{array}$$

$$6 \cdot 9 = 54$$

## Example

Multiply 6 by 9127.

$$\begin{array}{r} \phantom{6} \overset{5}{\cdot} \phantom{0} \overset{1}{9} \overset{4}{1} 2 7 \\ \hline \phantom{6} \textcolor{red}{5} 4 7 6 2 \end{array}$$

## Example

Multiply 6 by 9127.

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

## Example

Multiply 6 by 9127.

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

## Example

Multiply 11 by 12.



## Example

Multiply 11 by 12.

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

## Example

Multiply 11 by 12.

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

## Example

Multiply 11 by 12.

$$\begin{array}{r} 11 \cdot 12 \\ \hline \end{array} \quad ?$$

$$1 \cdot 2 = ?$$

## Example

Multiply 11 by 12.

$$\begin{array}{r} 11 \cdot 12 \\ \hline 2 \end{array}$$

$$1 \cdot 2 = 2$$

## Example

Multiply 11 by 12.

$$\begin{array}{r} 11 \cdot 12 \\ \hline 2 \end{array}$$

$$1 \cdot 2 = 2$$

## Example

Multiply 11 by 12.

$$\begin{array}{r} 11 \cdot 12 \\ \hline \phantom{11} ?2 \end{array}$$

$$1 \cdot 1 = ?$$

## Example

Multiply 11 by 12.

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

$$1 \cdot 1 = 1$$

## Example

Multiply 11 by 12.

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

$$1 \cdot 1 = 1$$



## Example

Multiply 11 by 12.

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

$$1 \cdot 2 = ?$$

## Example

Multiply 11 by 12.

$$\begin{array}{r} 11 \cdot 12 \\ \hline 12 \\ 2 \end{array}$$

$$1 \cdot 2 = 2$$

## Example

Multiply 11 by 12.

$$\begin{array}{r} 11 \cdot 12 \\ \hline 12 \\ 2 \end{array}$$

$$1 \cdot 2 = 2$$

## Example

Multiply 11 by 12.

$$\begin{array}{r} 11 \cdot 12 \\ \hline 12 \\ ?2 \end{array}$$

$$1 \cdot 1 = ?$$

## Example

Multiply 11 by 12.

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

$$1 \cdot 1 = 1$$

## Example

Multiply 11 by 12.

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

$$1 \cdot 1 = 1$$

## Example

Multiply 11 by 12.

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

## Example

Multiply 11 by 12.

$$\begin{array}{r} 11 \cdot 12 \\ \hline 12 \\ + 12 \\ \hline 2 \end{array}$$



## Example

Multiply 11 by 12.

$$\begin{array}{r} 11 \cdot 12 \\ \hline \phantom{+} \phantom{1} 2 \\ + \phantom{1} 1 2 \\ \hline \phantom{+} \phantom{1} ? 2 \end{array}$$

$$1 + 2 = ?$$

## Example

Multiply 11 by 12.

$$\begin{array}{r} 11 \cdot 12 \\ \hline \phantom{+} 12 \\ + \phantom{1} 12 \\ \hline \phantom{+} 32 \end{array}$$

$$1 + 2 = 3$$

## Example

Multiply 11 by 12.

$$\begin{array}{r} 11 \cdot 12 \\ \hline 12 \\ + 12 \\ \hline 32 \end{array}$$

$$1 + 2 = 3$$

## Example

Multiply 11 by 12.

$$\begin{array}{r} 11 \cdot 12 \\ \hline 12 \\ + \textcolor{red}{1}2 \\ \hline \textcolor{red}{1}32 \end{array}$$

## Example

Multiply 11 by 12.

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

## Example

Multiply 39 by 33.

## Example

Multiply 39 by 33.

$$\begin{array}{r} 39 \\ \times 33 \\ \hline \end{array}$$

## Example

Multiply 39 by 33.

$$\begin{array}{r} 39 \\ \times 33 \\ \hline \end{array}$$



## Example

Multiply 39 by 33.

$$\begin{array}{r} 39 \cdot 33 \\ \hline \end{array}$$

?

$$9 \cdot 3 = ?$$

## Example

Multiply 39 by 33.

$$\begin{array}{r} \phantom{3}^2 \\ 39 \cdot 33 \\ \hline \phantom{3}7 \end{array}$$

$$9 \cdot 3 = 27$$

## Example

Multiply 39 by 33.

$$\begin{array}{r} \phantom{0}^2 \\ 39 \cdot 33 \\ \hline \phantom{00}7 \end{array}$$

$$9 \cdot 3 = 27$$

## Example

Multiply 39 by 33.

$$\begin{array}{r} \phantom{0}^2 \\ 39 \cdot 33 \\ \hline \phantom{00}7 \end{array}$$

$$9 \cdot 3 = 27$$

## Example

Multiply 39 by 33.

$$\begin{array}{r} \phantom{3}^2 \\ 39 \cdot 33 \\ \hline \phantom{3} ? 7 \end{array}$$

$$9 \cdot 3 + 2 = \quad ?$$

## Example

Multiply 39 by 33.

$$\begin{array}{r} \phantom{3}^2 \phantom{9}^2 \\ 39 \cdot 33 \\ \hline 97 \end{array}$$

$$9 \cdot 3 + 2 = 27 + 2 = 29$$

## Example

Multiply 39 by 33.

$$\begin{array}{r} \phantom{0}^2 \phantom{0}^2 \\ 39 \cdot 33 \\ \hline \phantom{0}97 \end{array}$$

$$9 \cdot 3 + 2 = 27 + 2 = 29$$

## Example

Multiply 39 by 33.

$$\begin{array}{r} \phantom{0}^2 \phantom{0}^2 \\ 39 \cdot 33 \\ \hline 97 \end{array}$$

$$9 \cdot 3 + 2 = 27 + 2 = 29$$



## Example

Multiply 39 by 33.

$$\begin{array}{r} \phantom{0}^2 \phantom{0}^2 \\ 39 \cdot 33 \\ \hline 297 \end{array}$$

## Example

Multiply 39 by 33.

$$\begin{array}{r} 39 \cdot 33 \\ \hline 297 \\ ? \end{array}$$

$$3 \cdot 3 = ?$$

## Example

Multiply 39 by 33.

$$\begin{array}{r} 39 \cdot 33 \\ \hline 297 \\ 9 \end{array}$$

$$3 \cdot 3 = 9$$

## Example

Multiply 39 by 33.

$$\begin{array}{r} 39 \cdot 33 \\ \hline 297 \\ 9 \end{array}$$

$$3 \cdot 3 = 9$$

## Example

Multiply 39 by 33.

$$\begin{array}{r} 39 \cdot 33 \\ \hline \end{array}$$

$$297$$

$$?9$$

$$3 \cdot 3 = ?$$

## Example

Multiply 39 by 33.

$$\begin{array}{r} 39 \cdot 33 \\ \hline 297 \\ 99 \end{array}$$

$$3 \cdot 3 = 9$$

## Example

Multiply 39 by 33.

$$\begin{array}{r} 39 \cdot 33 \\ \hline 297 \\ 99 \end{array}$$

$$3 \cdot 3 = 9$$

## Example

Multiply 39 by 33.

$$\begin{array}{r} 39 \cdot 33 \\ \hline + \quad 297 \\ \quad 99 \\ \hline \end{array}$$



## Example

Multiply 39 by 33.

$$\begin{array}{r} 39 \cdot 33 \\ \hline + \quad 29\textcolor{red}{7} \\ \quad 99 \\ \hline \quad \quad \textcolor{red}{7} \end{array}$$

## Example

Multiply 39 by 33.

$$\begin{array}{r} 39 \cdot 33 \\ \hline \phantom{0} ? \\ + \phantom{0} 297 \\ \phantom{0} 99 \\ \hline \phantom{0} ?7 \end{array}$$

$$9 + 9 = ?$$

## Example

Multiply 39 by 33.

$$\begin{array}{r} 39 \cdot 33 \\ \hline \phantom{0} 1 \\ + \phantom{0} 297 \\ \phantom{0} 99 \\ \hline \phantom{0} 87 \end{array}$$

$$9 + 9 = 18$$

## Example

Multiply 39 by 33.

$$\begin{array}{r} 39 \cdot 33 \\ \hline 1 \\ + 297 \\ + 99 \\ \hline 87 \end{array}$$

$$9 + 9 = 18$$

## Example

Multiply 39 by 33.

$$\begin{array}{r} 39 \cdot 33 \\ \hline \phantom{0} \overset{1}{9} \\ + \phantom{0} 99 \\ \hline \phantom{0} 87 \end{array}$$

$$9 + 9 = 18$$

## Example

Multiply 39 by 33.

$$\begin{array}{r}
 39 \cdot 33 \\
 \hline
 \textcolor{red}{?} \textcolor{red}{1} \\
 + \textcolor{red}{2}97 \\
 \textcolor{red}{9}9 \\
 \hline
 \textcolor{red}{?}87
 \end{array}$$

$$\textcolor{red}{1} + \textcolor{red}{2} + \textcolor{red}{9} = \textcolor{red}{?}$$

## Example

Multiply 39 by 33.

$$\begin{array}{r} 39.33 \\ + 2.99 \\ \hline 42.32 \end{array}$$

$$1 + 2 + 9 = 12$$

## Example

Multiply 39 by 33.

$$\begin{array}{r} 39 \cdot 33 \\ \hline \phantom{0}1 \phantom{0}1 \\ + \phantom{0}297 \\ \phantom{0}99 \\ \hline \phantom{0}287 \end{array}$$

$$1 + 2 + 9 = 12$$



## Example

Multiply 39 by 33.

$$\begin{array}{r} 39 \cdot 33 \\ \hline \phantom{0} 1 \phantom{0} 1 \\ + \phantom{0} 297 \\ \phantom{0} 99 \\ \hline \phantom{0} 287 \end{array}$$

$$1 + 2 + 9 = 12$$

## Example

Multiply 39 by 33.

$$\begin{array}{r} 39 \cdot 33 \\ \hline \phantom{+} \overset{\textcolor{red}{1}}{1} \phantom{0} \\ \phantom{+} 297 \\ + \phantom{0} 99 \\ \hline \textcolor{red}{1} 287 \end{array}$$

## Example

Multiply 39 by 33.

$$\begin{array}{r} 39 \cdot 33 \\ \hline \phantom{+} 11 \\ \phantom{+} 297 \\ + \phantom{0} 99 \\ \hline 1287 \end{array}$$

## Example

Multiply 30 by 88.

## Example

Multiply 30 by 88.

$$\begin{array}{r} 30 \\ \hline \end{array} \cdot 88$$

## Example

Multiply 30 by 88.

$$\begin{array}{r} 30 \cdot 88 \\ \hline \end{array}$$

## Example

Multiply 30 by 88.

$$\begin{array}{r} 30 \cdot 88 \\ \hline \end{array}$$

?

$$0 \cdot 8 = ?$$

## Example

Multiply 30 by 88.

$$\begin{array}{r} 30 \cdot 88 \\ \hline 0 \end{array}$$

$$0 \cdot 8 = 0$$



## Example

Multiply 30 by 88.

$$\begin{array}{r} 30 \cdot 88 \\ \hline 0 \end{array}$$

$$0 \cdot 8 = 0$$

## Example

Multiply 30 by 88.

$$\begin{array}{r} 30 \cdot 88 \\ \hline \phantom{30} 0 \\ \phantom{30} ?0 \end{array}$$

$$0 \cdot 8 = ?$$

## Example

Multiply 30 by 88.

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

$$0 \cdot 8 = 0$$

## Example

Multiply 30 by 88.

$$\begin{array}{r} 30 \cdot 88 \\ \hline \phantom{00}00 \end{array}$$

$$0 \cdot 8 = 0$$

## Example

Multiply 30 by 88.

$$\begin{array}{r} 30 \cdot 88 \\ \hline 00 \\ ? \end{array}$$

$$3 \cdot 8 = ?$$

## Example

Multiply 30 by 88.

$$\begin{array}{r} \phantom{0}^2 \\ 30 \cdot 88 \\ \hline 00 \\ 4 \end{array}$$

$$3 \cdot 8 = 24$$

## Example

Multiply 30 by 88.

$$\begin{array}{r} \phantom{0}^2 \\ 30 \cdot 88 \\ \hline 00 \\ \phantom{00}4 \end{array}$$

$$3 \cdot 8 = 24$$

## Example

Multiply 30 by 88.

$$\begin{array}{r} \phantom{30} \overset{2}{8}8 \\ 30 \cdot \phantom{00} \\ \hline \phantom{30} 00 \\ \phantom{30} 4 \phantom{0} \end{array}$$

$$3 \cdot 8 = 24$$



## Example

Multiply 30 by 88.

$$\begin{array}{r}
 \phantom{30}^2 \\
 30 \cdot 88 \\
 \hline
 \phantom{30}00 \\
 \phantom{30}4
 \end{array}$$

$$3 \cdot 8 + 2 = ?$$

## Example

Multiply 30 by 88.

$$\begin{array}{r} \phantom{0}^2 \phantom{0}^2 \\ 30 \cdot 88 \\ \hline 00 \\ 64 \phantom{0} \end{array}$$

$$3 \cdot 8 + 2 = 24 + 2 = 26$$

## Example

Multiply 30 by 88.

$$\begin{array}{r}
 \phantom{00}^2 \phantom{00}^2 \\
 30 \cdot 88 \\
 \hline
 \phantom{00}00 \\
 \phantom{00}64
 \end{array}$$

$$3 \cdot 8 + 2 = 24 + 2 = 26$$

## Example

Multiply 30 by 88.

$$\begin{array}{r} \phantom{0}^{\textcolor{red}{2}}\phantom{0}^{\textcolor{red}{2}} \\ 30 \cdot 88 \\ \hline \phantom{00}00 \\ 64 \phantom{0} \end{array}$$

$$3 \cdot 8 + 2 = 24 + 2 = \textcolor{red}{2}6$$

## Example

Multiply 30 by 88.

$$\begin{array}{r} \phantom{0}^{\textcolor{red}{2}}\phantom{0}^{\textcolor{red}{2}} \\ 30 \cdot 88 \\ \hline \phantom{00}00 \\ \textcolor{red}{2}64 \end{array}$$

## Example

Multiply 30 by 88.

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

## Example

Multiply 30 by 88.

$$\begin{array}{r} 30 \cdot 88 \\ \hline 00 \\ + 264 \\ \hline 0 \end{array}$$

## Example

Multiply 30 by 88.

$$\begin{array}{r} 30 \cdot 88 \\ \hline \phantom{30} \textcolor{red}{0}0 \\ + \phantom{30} 26\textcolor{red}{4} \\ \hline \phantom{30} \textcolor{red}{?}0 \end{array}$$

$$\textcolor{red}{0} + \textcolor{red}{4} = \textcolor{red}{?}$$



## Example

Multiply 30 by 88.

$$\begin{array}{r} 30 \cdot 88 \\ \hline \phantom{30} \textcolor{red}{0}0 \\ + \phantom{30} 26\textcolor{red}{4} \\ \hline \phantom{30} \textcolor{red}{4}0 \end{array}$$

$$\textcolor{red}{0} + \textcolor{red}{4} = \textcolor{red}{4}$$

## Example

Multiply 30 by 88.

$$\begin{array}{r} 30 \cdot 88 \\ \hline \phantom{30} 00 \\ + \phantom{30} 264 \\ \hline \phantom{30} 40 \end{array}$$

$$0 + 4 = 4$$

## Example

Multiply 30 by 88.

$$\begin{array}{r} 30 \cdot 88 \\ \hline \phantom{30} 00 \\ + \phantom{30} 264 \\ \hline \phantom{30} 640 \end{array}$$

## Example

Multiply 30 by 88.

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

## Example

Multiply 30 by 88.

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

## Example

Multiply 30 by 88.

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

Multiply 3 by 88.

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

## Example

Multiply 30 by 88.

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

Multiply 3 by 88.

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

## Example

Multiply 30 by 88.

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

Multiply 3 by 88.

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

$$3 \cdot 8 = ?$$



## Example

Multiply 30 by 88.

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

Multiply 3 by 88.

$$\begin{array}{r} \phantom{3}^2 \\ 3 \cdot 88 \\ \hline 4 \end{array}$$

$$3 \cdot 8 = 24$$

## Example

Multiply 30 by 88.

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

Multiply 3 by 88.

$$\begin{array}{r}
 \phantom{3}^2 \\
 3 \cdot 88 \\
 \hline
 \phantom{3}4
 \end{array}$$

$$3 \cdot 8 = 24$$

## Example

Multiply 30 by 88.

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

Multiply 3 by 88.

$$\begin{array}{r}
 \phantom{3}^2 \\
 3 \cdot 88 \\
 \hline
 \phantom{3}4
 \end{array}$$

$$3 \cdot 8 = 24$$

## Example

Multiply 30 by 88.

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

Multiply 3 by 88.

$$\begin{array}{r}
 \phantom{3}^2 \\
 3 \cdot 88 \\
 \hline
 ?4
 \end{array}$$

$$3 \cdot 8 + 2 = \quad ?$$

## Example

Multiply 30 by 88.

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

Multiply 3 by 88.

$$\begin{array}{r}
 \phantom{3}^2 \phantom{3}^2 \\
 3 \cdot 88 \\
 \hline
 64
 \end{array}$$

$$3 \cdot 8 + 2 = 24 + 2 = 26$$

## Example

Multiply 30 by 88.

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

Multiply 3 by 88.

$$\begin{array}{r}
 \phantom{3}^2 \phantom{3}^2 \\
 3 \cdot 88 \\
 \hline
 \phantom{3}64
 \end{array}$$

$$3 \cdot 8 + 2 = 24 + 2 = 26$$

## Example

Multiply 30 by 88.

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

Multiply 3 by 88.

$$\begin{array}{r} \phantom{2}^2 \phantom{2}^2 \\ 3 \cdot 88 \\ \hline 64 \end{array}$$

$$3 \cdot 8 + 2 = 24 + 2 = 26$$

## Example

Multiply 30 by 88.

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

Multiply 3 by 88.

$$\begin{array}{r}
 \phantom{3}^2 \phantom{3}^2 \\
 3 \cdot 88 \\
 \hline
 \phantom{3}264
 \end{array}$$



## 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 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.

## Example

Multiply 307 by 804.

$$\underline{307 \cdot 804}$$

## Example

Multiply 307 by 804.

$$\underline{307 \cdot 804}$$

## Example

Multiply 307 by 804.

$$\begin{array}{r} 307 \cdot 804 \\ \hline \end{array}$$

?

$$7 \cdot 4 = ?$$

## Example

Multiply 307 by 804.

$$\begin{array}{r} 307 \cdot 804 \\ \hline \end{array}$$

$$7 \cdot 4 = 28$$

## Example

Multiply 307 by 804.

$$\begin{array}{r} \phantom{00} 307 \cdot 804 \\ \hline \phantom{00} 1228 \end{array}$$

$$7 \cdot 4 = 28$$



## Example

Multiply 307 by 804.

$$\begin{array}{r} 307 \cdot 804 \\ \hline 8 \end{array}$$

$$7 \cdot 4 = 28$$

## Example

Multiply 307 by 804.

$$\begin{array}{r} \phantom{30}7^{\phantom{0}2} \cdot 804 \\ \hline \phantom{30}7^{\phantom{0}2}8 \end{array}$$

$$7 \cdot 0 + 2 = ?$$

## Example

Multiply 307 by 804.

$$\begin{array}{r} 307 \cdot 804 \\ \hline \end{array}$$

The diagram shows the multiplication of 307 by 804. The number 307 is on the left, and 804 is on the right. A red '2' is positioned above the '0' in 804. A horizontal line is drawn under the numbers. Below the line, the number 28 is written in red.

$$7 \cdot 0 + 2 = 2$$

## Example

Multiply 307 by 804.

$$\begin{array}{r} \phantom{00} 307 \cdot 804 \\ \hline \phantom{00} 28 \end{array}$$

$$7 \cdot 0 + 2 = 2$$

## Example

Multiply 307 by 804.

$$\begin{array}{r} 307 \cdot 804 \\ \hline \end{array}$$

$7 \cdot 8 = ?$

## Example

Multiply 307 by 804.

$$\begin{array}{r} \phantom{00} \overset{5}{3}0\overset{2}{7} \cdot 804 \\ \hline \phantom{00} \phantom{00} 628 \end{array}$$

$$7 \cdot 8 = 56$$

## Example

Multiply 307 by 804.

$$\begin{array}{r} \phantom{0}5 \phantom{0}2 \\ 307 \cdot 804 \\ \hline \phantom{00}628 \end{array}$$

$$7 \cdot 8 = 56$$

## Example

Multiply 307 by 804.

$$\begin{array}{r} \phantom{00} \overset{5}{3}07 \cdot \overset{2}{8}04 \\ \hline \phantom{00}628 \end{array}$$

$$7 \cdot 8 = 56$$



## Example

Multiply 307 by 804.

$$\begin{array}{r} \phantom{0}^5 \phantom{0}^2 \\ 307 \cdot 804 \\ \hline \phantom{0}^5 628 \end{array}$$

## Example

Multiply 307 by 804.

$$\begin{array}{r} 307 \cdot 804 \\ \hline 5628 \\ ? \end{array}$$

$$0 \cdot 4 = ?$$

## Example

Multiply 307 by 804.

$$\begin{array}{r} 307 \cdot 804 \\ \hline 5628 \\ 0 \end{array}$$

$$0 \cdot 4 = 0$$

## Example

Multiply 307 by 804.

$$\begin{array}{r} 307 \cdot 804 \\ \hline 5628 \\ 0 \end{array}$$

$$0 \cdot 4 = 0$$

## Example

Multiply 307 by 804.

$$\begin{array}{r} 307 \cdot 804 \\ \hline 5628 \\ \phantom{5628} ?0 \end{array}$$

$$0 \cdot 0 = ?$$

## Example

Multiply 307 by 804.

$$\begin{array}{r} 307 \cdot 804 \\ \hline 5628 \\ 00 \end{array}$$

$$0 \cdot 0 = 0$$

## Example

Multiply 307 by 804.

$$\begin{array}{r} 307 \cdot 804 \\ \hline 5628 \\ \phantom{5628}00 \end{array}$$

$$0 \cdot 0 = 0$$

## Example

Multiply 307 by 804.

$$\begin{array}{r} 307 \cdot 804 \\ \hline 5628 \\ ?00 \end{array}$$

$$0 \cdot 8 = ?$$



## Example

Multiply 307 by 804.

$$\begin{array}{r} 307 \cdot 804 \\ \hline 5628 \\ 000 \end{array}$$

$$0 \cdot 8 = 0$$

## Example

Multiply 307 by 804.

$$\begin{array}{r} 307 \cdot 804 \\ \hline 5628 \\ 000 \end{array}$$

$$0 \cdot 8 = 0$$

## Example

Multiply 307 by 804.

$$\begin{array}{r} 307 \cdot 804 \\ \hline 5628 \\ 000 \\ ? \end{array}$$

$$3 \cdot 4 = ?$$

## Example

Multiply 307 by 804.

$$\begin{array}{r} \phantom{0}^1 307 \cdot 804 \\ \hline \phantom{0} 5628 \\ \phantom{0} 000 \\ \phantom{0} 2 \end{array}$$

$$3 \cdot 4 = 12$$

## Example

Multiply 307 by 804.

$$\begin{array}{r} \phantom{00} 1 \\ 307 \cdot 804 \\ \hline \phantom{00} 5628 \\ \phantom{00} 000 \\ \phantom{00} 2 \end{array}$$

$$3 \cdot 4 = 12$$

## Example

Multiply 307 by 804.

$$\begin{array}{r} \phantom{00} 307 \cdot 804 \\ \hline \phantom{00} 5628 \\ \phantom{00} 000 \\ \phantom{00} 2 \end{array}$$

$$3 \cdot 4 = 12$$



## Example

Multiply 307 by 804.

$$\begin{array}{r} \phantom{00} \overset{1}{307} \cdot 804 \\ \hline \phantom{00} 5628 \\ \phantom{00} 000 \\ \phantom{00} \overset{1}{12} \end{array}$$

$$3 \cdot 0 + 1 = 1$$



## Example

Multiply 307 by 804.

$$\begin{array}{r} \phantom{00} 1 \\ 307 \cdot 804 \\ \hline 5628 \\ 000 \\ \textcolor{red}{1}2 \end{array}$$

$$3 \cdot 0 + 1 = \textcolor{red}{1}$$

## Example

Multiply 307 by 804.

$$\begin{array}{r} \phantom{00}^1 \\ 307 \cdot 804 \\ \hline 5628 \\ 000 \\ ?12 \end{array}$$

$$3 \cdot 8 = ?$$

## Example

Multiply 307 by 804.

$$\begin{array}{r} \phantom{00}^2 \phantom{00}^1 \\ 307 \cdot 804 \\ \hline 5628 \\ 000 \\ 412 \end{array}$$

$$3 \cdot 8 = 24$$

## Example

Multiply 307 by 804.

$$\begin{array}{r} \phantom{00}^2 \phantom{00}^1 \\ 307 \cdot 804 \\ \hline 5628 \\ 000 \\ \textcolor{red}{4}12 \end{array}$$

$$3 \cdot 8 = 2\textcolor{red}{4}$$

## Example

Multiply 307 by 804.

$$\begin{array}{r} \phantom{00} \overset{2}{3}07 \cdot \overset{1}{8}04 \\ \hline \phantom{00} 5628 \\ \phantom{00} 000 \\ \phantom{00} 412 \end{array}$$

$$3 \cdot 8 = 24$$

## Example

Multiply 307 by 804.

$$\begin{array}{r} \phantom{00} \overset{2}{3}07 \cdot \overset{1}{8}04 \\ \hline \phantom{00} 5628 \\ \phantom{00} 000 \\ \phantom{00} \overset{2}{4}12 \end{array}$$

## Example

Multiply 307 by 804.

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

## Example

Multiply 307 by 804.

$$\begin{array}{r} 307 \cdot 804 \\ \hline 5628 \\ + \quad 000 \\ 2412 \\ \hline 8 \end{array}$$



## Example

Multiply 307 by 804.

$$\begin{array}{r} 307 \cdot 804 \\ \hline 5628 \\ + \quad 000 \\ 2412 \\ \hline \quad ?8 \end{array}$$

$$2 + 0 = ?$$

## Example

Multiply 307 by 804.

$$\begin{array}{r} 307 \cdot 804 \\ \hline 5628 \\ + \quad 000 \\ 2412 \\ \hline 28 \end{array}$$

$$2 + 0 = 2$$

## Example

Multiply 307 by 804.

$$\begin{array}{r} 307 \cdot 804 \\ \hline 5628 \\ + \quad 000 \\ 2412 \\ \hline \quad \quad 28 \end{array}$$

$$2 + 0 = 2$$

## Example

Multiply 307 by 804.

$$\begin{array}{r} 307 \cdot 804 \\ \hline 5628 \\ + \quad 000 \\ 2412 \\ \hline \quad ?28 \end{array}$$

$$6 + 0 + 2 = ?$$

## Example

Multiply 307 by 804.

$$\begin{array}{r} 307 \cdot 804 \\ \hline 5\textcolor{red}{6}28 \\ + \quad 000 \\ 241\textcolor{red}{2} \\ \hline \textcolor{red}{8}28 \end{array}$$

$$\textcolor{red}{6} + \textcolor{red}{0} + \textcolor{red}{2} = \textcolor{red}{8}$$

## Example

Multiply 307 by 804.

$$\begin{array}{r} 307 \cdot 804 \\ \hline 5628 \\ + \quad 000 \\ 2412 \\ \hline \quad 828 \end{array}$$

$$6 + 0 + 2 = 8$$

## Example

Multiply 307 by 804.

$$\begin{array}{r} 307 \cdot 804 \\ \hline \phantom{307} 5628 \\ + \phantom{307} 000 \\ \phantom{307} 2412 \\ \hline \phantom{307} ?828 \end{array}$$

$$5 + 0 + 1 = ?$$

## Example

Multiply 307 by 804.

$$\begin{array}{r} 307 \cdot 804 \\ \hline \phantom{307} 5628 \\ + \phantom{307} 000 \\ \phantom{307} 2412 \\ \hline \phantom{307} 6828 \end{array}$$

$$5 + 0 + 1 = 6$$



## Example

Multiply 307 by 804.

$$\begin{array}{r} 307 \cdot 804 \\ \hline 5628 \\ + \quad 000 \\ 2412 \\ \hline 6828 \end{array}$$

$$5 + 0 + 1 = 6$$

## Example

Multiply 307 by 804.

$$\begin{array}{r} 307 \cdot 804 \\ \hline 5628 \\ + \quad 000 \\ 2412 \\ \hline 46828 \end{array}$$

## Example

Multiply 307 by 804.

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

## 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.

## Example

Multiply 456 by 987.

$$\underline{456 \cdot 987}$$

## Example

Multiply 456 by 987.

$$\begin{array}{r} 456 \cdot 987 \\ \hline \end{array}$$

## Example

Multiply 456 by 987.

$$\begin{array}{r} 456 \cdot 987 \\ \hline \end{array}$$

?

$$6 \cdot 7 = ?$$



## Example

Multiply 456 by 987.

$$\begin{array}{r} \phantom{45}6^4 \cdot 987^2 \\ \hline \end{array}$$

$$6 \cdot 7 = 42$$

## Example

Multiply 456 by 987.

$$\begin{array}{r} 456 \cdot 987 \\ \hline \end{array}$$

2

$$6 \cdot 7 = 42$$

## Example

Multiply 456 by 987.

$$\begin{array}{r} \phantom{0}^4 \\ 456 \cdot 987 \\ \hline \phantom{000}2 \end{array}$$

$$6 \cdot 7 = 42$$

## Example

Multiply 456 by 987.

$$\begin{array}{r} \phantom{45}6^4 \cdot 987 \\ \hline \phantom{45} ? 2 \end{array}$$

$$6 \cdot 8 + 4 = \quad ?$$

## Example

Multiply 456 by 987.

$$\begin{array}{r} \phantom{00} 5 \phantom{00} 4 \\ 45\color{red}{6} \cdot 9\color{red}{8}7 \\ \hline \phantom{0000} \color{red}{2}2 \end{array}$$

$$\color{red}{6 \cdot 8 + 4 = 48 + 4 = 52}$$

## Example

Multiply 456 by 987.

$$\begin{array}{r} \phantom{00} 5 \phantom{0} 4 \\ 456 \cdot 987 \\ \hline \phantom{0000} 22 \end{array}$$

$$6 \cdot 8 + 4 = 48 + 4 = 52$$

## Example

Multiply 456 by 987.

$$\begin{array}{r} \phantom{0}^{\textcolor{red}{5}}\phantom{0}^4 \\ 456 \cdot 987 \\ \hline \phantom{00}22 \end{array}$$

$$6 \cdot 8 + 4 = 48 + 4 = \textcolor{red}{5}2$$

## Example

Multiply 456 by 987.

$$\begin{array}{r} \phantom{00} \overset{5}{4} \overset{5}{5} \overset{4}{6} \cdot \overset{5}{9} \overset{4}{8} \overset{3}{7} \\ \hline \phantom{00} \overset{5}{?} \overset{4}{2} \overset{3}{2} \end{array}$$

$$6 \cdot 9 + 5 = ?$$





## Example

Multiply 456 by 987.

$$\begin{array}{r} \phantom{00}5\phantom{00}5\phantom{00}4 \\ 456 \cdot 987 \\ \hline \phantom{000}922 \end{array}$$

$$6 \cdot 9 + 5 = 54 + 5 = 59$$

## Example

Multiply 456 by 987.

$$\begin{array}{r} \phantom{0} \overset{5}{5} \overset{5}{4} \\ 456 \cdot 987 \\ \hline \phantom{00} 922 \end{array}$$

$$6 \cdot 9 + 5 = 54 + 5 = 59$$

## Example

Multiply 456 by 987.

$$\begin{array}{r} \phantom{0} \overset{5}{5} \overset{5}{5} \overset{4}{4} \\ 456 \cdot 987 \\ \hline 5922 \end{array}$$

## Example

Multiply 456 by 987.

$$\begin{array}{r} 456 \cdot 987 \\ \hline \end{array}$$

$$5922$$

?

$$5 \cdot 7 = ?$$

## Example

Multiply 456 by 987.

$$\begin{array}{r} \phantom{0}^3 \\ 456 \cdot 987 \\ \hline \phantom{00}5922 \\ \phantom{000}5 \end{array}$$

$$5 \cdot 7 = 35$$

## Example

Multiply 456 by 987.

$$\begin{array}{r} \phantom{00}^3 \\ 456 \cdot 987 \\ \hline \phantom{00}5922 \\ \phantom{00}5 \end{array}$$

$$5 \cdot 7 = 35$$

## Example

Multiply 456 by 987.

$$\begin{array}{r} \phantom{0}^3 \\ 456 \cdot 987 \\ \hline \phantom{00}5922 \\ \phantom{000}5 \end{array}$$

$$5 \cdot 7 = 35$$



## Example

Multiply 456 by 987.

$$\begin{array}{r} \phantom{00}456 \cdot 987 \\ \hline \phantom{00}5922 \\ \phantom{00}5 \end{array}$$

$$5 \cdot 8 + 3 = \quad ?$$

## Example

Multiply 456 by 987.

$$\begin{array}{r} \phantom{00}456 \cdot 987 \\ \hline \phantom{00}5922 \\ \phantom{00}35 \phantom{00} \end{array}$$

$$5 \cdot 8 + 3 = 40 + 3 = 43$$

## Example

Multiply 456 by 987.

$$\begin{array}{r} \phantom{00}4\phantom{00}5\phantom{00}6\phantom{00} \cdot 987 \\ \hline \phantom{00}5922 \\ \phantom{00}35 \end{array}$$

$$5 \cdot 8 + 3 = 40 + 3 = 4\textcolor{red}{3}$$

## Example

Multiply 456 by 987.

$$\begin{array}{r} \phantom{0}^{\textcolor{red}{4}}\phantom{0}^{\textcolor{red}{3}} \\ 456 \cdot 987 \\ \hline 5922 \\ 35 \end{array}$$

$$5 \cdot 8 + 3 = 40 + 3 = \textcolor{red}{4}3$$

## Example

Multiply 456 by 987.

$$\begin{array}{r}
 \phantom{4}^4 \phantom{5}^3 \\
 456 \cdot 987 \\
 \hline
 5922 \\
 ?35
 \end{array}$$

$$5 \cdot 9 + 4 = \quad ?$$

## Example

Multiply 456 by 987.

$$\begin{array}{r} \phantom{0}^4\phantom{0}^4\phantom{0}^3 \\ 456 \cdot 987 \\ \hline 5922 \\ 935 \end{array}$$

$$5 \cdot 9 + 4 = 45 + 4 = 49$$

## Example

Multiply 456 by 987.

$$\begin{array}{r} \phantom{4}4\phantom{4}3 \\ 456 \cdot 987 \\ \hline 5922 \\ 935 \phantom{0} \end{array}$$

$$5 \cdot 9 + 4 = 45 + 4 = 49$$

## Example

Multiply 456 by 987.

$$\begin{array}{r} \phantom{4}^4\phantom{5}^4\phantom{6}^3 \\ 456 \cdot 987 \\ \hline 5922 \\ 935 \end{array}$$

$$5 \cdot 9 + 4 = 45 + 4 = 49$$



## Example

Multiply 456 by 987.

$$\begin{array}{r} \phantom{4}^4\phantom{5}^4\phantom{6}^3 \\ 456 \cdot 987 \\ \hline 5922 \\ 4935 \end{array}$$

## Example

Multiply 456 by 987.

$$\begin{array}{r} 456 \cdot 987 \\ \hline 5922 \\ 4935 \\ ? \end{array}$$

$$4 \cdot 7 = ?$$

## Example

Multiply 456 by 987.

$$\begin{array}{r} \phantom{00} 456 \cdot 987 \\ \hline \phantom{00} 5922 \\ \phantom{00} 4935 \\ \phantom{00} 8 \end{array}$$

$$4 \cdot 7 = 28$$

## Example

Multiply 456 by 987.

$$\begin{array}{r} \phantom{00}^2 \\ 456 \cdot 987 \\ \hline \phantom{00}5922 \\ \phantom{00}4935 \\ \phantom{000}8 \end{array}$$

$$4 \cdot 7 = 28$$

## Example

Multiply 456 by 987.

$$\begin{array}{r} \phantom{0}^2 \\ 456 \cdot 987 \\ \hline 5922 \\ 4935 \\ 8 \end{array}$$

$$4 \cdot 7 = 28$$

## Example

Multiply 456 by 987.

$$\begin{array}{r} 456 \cdot 987 \\ \hline \end{array}$$

$$\begin{array}{r} 5922 \\ 4935 \\ ?8 \end{array}$$

$$4 \cdot 8 + 2 = ?$$

## Example

Multiply 456 by 987.

$$\begin{array}{r} \phantom{00} \overset{3}{4}56 \cdot \overset{2}{9}87 \\ \hline \phantom{00} 5922 \\ \phantom{00} 4935 \\ \phantom{00} 48 \phantom{00} \end{array}$$

$$4 \cdot 8 + 2 = 32 + 2 = 34$$

## Example

Multiply 456 by 987.

$$\begin{array}{r} \phantom{00} 3 \phantom{00} 2 \\ 456 \cdot 987 \\ \hline \phantom{00} 5922 \\ \phantom{00} 4935 \\ \phantom{00} \color{red}{48} \end{array}$$

$$4 \cdot 8 + 2 = 32 + 2 = 3\color{red}{4}$$



## Example

Multiply 456 by 987.

$$\begin{array}{r} \phantom{0}^{\textcolor{red}{3}}\phantom{0}^2 \\ 456 \cdot 987 \\ \hline \phantom{00}5922 \\ \phantom{00}4935 \\ \phantom{000}48 \end{array}$$

$$4 \cdot 8 + 2 = 32 + 2 = \textcolor{red}{3}4$$

## Example

Multiply 456 by 987.

$$\begin{array}{r} \phantom{00}^3 \phantom{00}^2 \\ 456 \cdot 987 \\ \hline \end{array}$$

$$\begin{array}{r} 5922 \\ 4935 \\ ?48 \end{array}$$

$$4 \cdot 9 + 3 = \quad ?$$

## Example

Multiply 456 by 987.

$$\begin{array}{r} \phantom{00} \overset{3}{4} \overset{3}{5} \overset{2}{6} \cdot \overset{3}{9} \overset{3}{8} \overset{2}{7} \\ \hline \phantom{00} 5922 \\ \phantom{00} 4935 \\ \phantom{00} \overset{3}{9}48 \end{array}$$

$$4 \cdot 9 + 3 = 36 + 3 = 39$$

## Example

Multiply 456 by 987.

$$\begin{array}{r} \phantom{00} 3 \phantom{00} 3 \phantom{00} 2 \\ 456 \cdot 987 \\ \hline \phantom{00} 5922 \\ \phantom{00} 4935 \\ \phantom{00} 948 \end{array}$$

$$4 \cdot 9 + 3 = 36 + 3 = 39$$

## Example

Multiply 456 by 987.

$$\begin{array}{r} \phantom{0} \overset{3}{3} \overset{2}{} \\ 456 \cdot 987 \\ \hline \phantom{00} 5922 \\ \phantom{0} 4935 \\ \phantom{00} 948 \end{array}$$

$$4 \cdot 9 + 3 = 36 + 3 = 39$$

## Example

Multiply 456 by 987.

$$\begin{array}{r} \phantom{00} \overset{\textcolor{red}{3}}{3} \phantom{00} \overset{3}{3} \overset{2}{2} \\ 456 \cdot 987 \\ \hline \phantom{00} 5922 \\ \phantom{00} 4935 \\ \textcolor{red}{3}948 \end{array}$$

## Example

Multiply 456 by 987.

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

## Example

Multiply 456 by 987.

$$\begin{array}{r} 456 \cdot 987 \\ \hline \phantom{+} 592\textcolor{red}{2} \\ + \phantom{+} 4935 \\ \phantom{+} 3948 \\ \hline \phantom{+} \phantom{+} \phantom{+} \textcolor{red}{2} \end{array}$$



## Example

Multiply 456 by 987.

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

$$2 + 5 = ?$$

## Example

Multiply 456 by 987.

$$\begin{array}{r} 456 \cdot 987 \\ \hline \phantom{456} 5922 \\ + \phantom{456} 4935 \\ \phantom{456} 3948 \\ \hline \phantom{456} \phantom{2} 72 \end{array}$$

$$2 + 5 = 7$$

## Example

Multiply 456 by 987.

$$\begin{array}{r} 456 \cdot 987 \\ \hline 5922 \\ + 4935 \\ 3948 \\ \hline 72 \end{array}$$

$$2 + 5 = 7$$

## Example

Multiply 456 by 987.

$$\begin{array}{r} 456 \cdot 987 \\ \hline \phantom{456} 5922 \\ + \phantom{456} 4935 \\ \phantom{456} 3948 \\ \hline \phantom{456} ?72 \end{array}$$

$$9 + 3 + 8 = ?$$

## Example

Multiply 456 by 987.

$$\begin{array}{r} 456 \cdot 987 \\ \hline \phantom{456} \overset{2}{9}22 \\ + \phantom{456} 49\overset{3}{3}5 \\ \phantom{456} 394\overset{8}{8} \\ \hline \phantom{456} \phantom{0}72 \end{array}$$

$$9 + 3 + 8 = 20$$

## Example

Multiply 456 by 987.

$$\begin{array}{r} 456 \cdot 987 \\ \hline \phantom{456} \phantom{0} 2 \\ \phantom{456} 5922 \\ + \phantom{456} 4935 \\ \phantom{456} 3948 \\ \hline \phantom{456} \phantom{0} 72 \end{array}$$

$$9 + 3 + 8 = 20$$

## Example

Multiply 456 by 987.

$$\begin{array}{r} 456 \cdot 987 \\ \hline \phantom{456} \overset{2}{9}87 \\ + \phantom{456} 4935 \\ \phantom{456} 3948 \\ \hline \phantom{456} 072 \end{array}$$

$$9 + 3 + 8 = 20$$

## Example

Multiply 456 by 987.

$$\begin{array}{r}
 456 \cdot 987 \\
 \hline
 \phantom{456} 2 \\
 \phantom{456} 5922 \\
 + \phantom{456} 4935 \\
 \phantom{456} 3948 \\
 \hline
 \phantom{456} 072
 \end{array}$$

$$2 + 5 + 9 + 4 = ?$$



## Example

Multiply 456 by 987.

$$\begin{array}{r} 456 \cdot 987 \\ \hline \phantom{456} \overset{2}{2} \phantom{00} \\ \phantom{456} 5922 \\ + \phantom{456} 4935 \\ \phantom{456} 3948 \\ \hline \phantom{456} 0072 \end{array}$$

$$2 + 5 + 9 + 4 = 20$$

## Example

Multiply 456 by 987.

$$\begin{array}{r} 456 \cdot 987 \\ \hline \phantom{456} \overset{2}{2} \phantom{2} \\ \phantom{456} 5922 \\ + \phantom{456} 4935 \\ \phantom{456} 3948 \\ \hline \phantom{456} \textcolor{red}{0}072 \end{array}$$

$$2 + 5 + 9 + 4 = 2\textcolor{red}{0}$$

## Example

Multiply 456 by 987.

$$\begin{array}{r} 456 \cdot 987 \\ \hline \phantom{00} 2 \phantom{00} 2 \\ \phantom{00} 5922 \\ + \phantom{00} 4935 \\ \phantom{00} 3948 \\ \hline \phantom{00} 0072 \end{array}$$

$$2 + 5 + 9 + 4 = 20$$

## Example

Multiply 456 by 987.

$$\begin{array}{r}
 456 \cdot 987 \\
 \hline
 \textcolor{red}{?} \textcolor{red}{2} \textcolor{red}{2} \\
 5922 \\
 + \textcolor{red}{4}935 \\
 3\textcolor{red}{9}48 \\
 \hline
 \textcolor{red}{?}0072
 \end{array}$$

$$\textcolor{red}{2} + \textcolor{red}{4} + \textcolor{red}{9} = \textcolor{red}{?}$$

## Example

Multiply 456 by 987.

$$\begin{array}{r}
 456 \cdot 987 \\
 \hline
 \phantom{456} 1 \phantom{2} 2 \\
 \phantom{456} 5922 \\
 + \phantom{456} 4935 \\
 \phantom{456} 3948 \\
 \hline
 \phantom{456} 50072
 \end{array}$$

$$2 + 4 + 9 = 15$$

## Example

Multiply 456 by 987.

$$\begin{array}{r} 456 \cdot 987 \\ \hline \phantom{456} 1 \phantom{00} 2 \phantom{00} 2 \\ \phantom{456} 5922 \\ + \phantom{456} 4935 \\ \phantom{456} 3948 \\ \hline \phantom{456} 50072 \end{array}$$

$$2 + 4 + 9 = 15$$

## Example

Multiply 456 by 987.

$$\begin{array}{r} 456 \cdot 987 \\ \hline \phantom{00} 5922 \\ + \phantom{00} 4935 \\ \phantom{00} 3948 \\ \hline 50072 \end{array}$$

$$2 + 4 + 9 = 15$$

## Example

Multiply 456 by 987.

$$\begin{array}{r}
 456 \cdot 987 \\
 \hline
 \phantom{456} \overset{1}{2} \overset{2}{} \\
 \phantom{456} 5922 \\
 + \phantom{456} 4935 \\
 \phantom{456} \overset{3}{9}48 \\
 \hline
 \phantom{456} \overset{?}{5}0072
 \end{array}$$

$$1 + 3 = ?$$



## Example

Multiply 456 by 987.

$$\begin{array}{r} 456 \cdot 987 \\ \hline \phantom{456} \overset{1}{9} \overset{2}{8} \overset{2}{7} \\ \phantom{456} 5922 \\ + \phantom{456} 4935 \\ \phantom{456} \overset{3}{9} 48 \\ \hline \phantom{456} \overset{4}{5} 0072 \end{array}$$

$$1 + 3 = 4$$

## Example

Multiply 456 by 987.

$$\begin{array}{r} 456 \cdot 987 \\ \hline \phantom{456} 1 \phantom{00} 2 \phantom{00} 2 \\ \phantom{456} 5922 \\ + \phantom{456} 4935 \\ \phantom{456} 3948 \\ \hline \phantom{456} \textcolor{red}{4}50072 \end{array}$$

$$1 + 3 = \textcolor{red}{4}$$

## Example

Multiply 456 by 987.

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