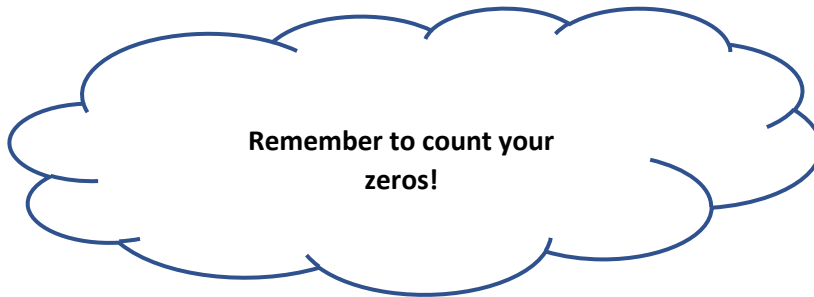


Steps and Examples

Multiplying by 10, 100 or 1 000.



Examples:

$$7 \times 10 = 70$$

$$20 \times 10 = 200$$

$$100 \times 300 = 30\,000$$

$$40 \times 6\,000 = 240\,000$$

$$30 \times 50 = 1\,500$$

$$7\,000 \times 3\,000 = 21\,000\,000$$

Step 1: Multiply the first digits of each number with each other.

Step 2: Count all the zeros and add them to the back of your answer.

Multiplying 4-digit numbers by 1-digit numbers.

Example: $2\,367 \times 8$

Breaking Down Method:

$$2\,000 \times 8 = 16\,000$$

$$300 \times 8 = 2\,400$$

$$60 \times 8 = 480$$

$$7 \times 8 = \underline{56}$$

$$\underline{18\,936}$$

- Break down 2 367
- Multiply each part with 8
- Add all the answers together.

Very Important:

Remember your **Place Values** when writing down the multiplication answers.

Notice that my units, tens, hundreds, thousands and ten thousands all line up with each other.

If your Place Values are not correct when writing down the multiplication answers, then you will have trouble adding everything together.

Example: 2 367 x 8

Vertical Column Method:

$$\begin{array}{r} +2 +5+5 \\ 2 \ 367 \\ \times 8 \\ \hline 18 \ 936 \end{array}$$

In this Method we work from the back going to the front.

(Like when we add or subtract)

- Start with the Unit
- Multiply 7 and 8 ($7 \times 8 = 56$)
- Write down the 6 and carry the 5 (Just like an addition sum)
- Now we go to the Ten
- Multiply 6 and 8 ($6 \times 8 = 48$)
- BEFORE you write anything you then add the 5 that you carried over ($48 + 5 = 53$)
- Write down the 3 and carry the 5
- Now we go to the Hundreds
- Multiply 3 and 8 ($3 \times 8 = 24$)
- BEFORE you write anything you then add the 5 that you carried over ($24 + 5 = 29$).
- Write down the 9 and carry the 2.
- Now we go to the Thousand.
- Multiply the 2 and 8 ($2 \times 8 = 16$)
- BEFORE you write anything you then add the 2 that you carried over ($16 + 2 = 18$)
- Write down the 8
- Now there is nowhere for you to carry the 1, so you write it down as part of the final answer.

Multiplying 4-digit numbers by 2-digit numbers.

Example: 2 367 x 58

Breaking Down Method:

$$2000 \times 50 = 100\ 000$$

$$300 \times 50 = 15\ 000$$

$$60 \times 50 = 3\ 000$$

$$7 \times 50 = 350$$

$$2\ 000 \times 8 = 16\ 000$$

$$300 \times 8 = 2\ 400$$

$$60 \times 8 = 480$$

$$7 \times 8 = \underline{\quad 56}$$

$$= \underline{137\ 286}$$

In this method we break down both numbers.

2 367 is multiplied with 58. So, to make it easier, we multiply by 50 first and then by 8.

- Break down 2 367
- Multiply each part with 50
- Break down 2 367 again.
- Multiply each part with 8
- Add all the answers together.

Very Important:

Remember your **Place Values** when writing down the multiplication answers.

Notice that my units, tens, hundreds, thousands and ten thousands all line up with each other.

If your Place Values are not correct when writing down the multiplication answers, then you will have trouble adding everything together.

Example: 2 367 x 58

Vertical Column Method:

$$\begin{array}{r} +1 +3 +3 \\ +2 +5+5 \\ 2\ 367 \\ \times \quad 58 \\ \hline 18\ 936 \\ + 118\ 350 \\ \hline 137\ 286 \end{array}$$

In this Method we work from the back going to the front.

(Like when we add or subtract)

- Start with the Unit (The 8).
- You will multiply 2 367 with the 8 exactly like in the previous example.
- Now we move on to multiply with the Ten (The 50).
- Remember: When we multiply with a Ten, our answer gets a zero at the back. Because we are working front the back to the front – You write down the zero on the next line before you start to multiply.
- Now, because we have already written down the zero, we are only going to multiply with a 5 (Not 50).
- Multiply 2 367 with 5. Follow the steps from the example before.
- Add the two answers together to get the final answer.

Multiplying 4-digit numbers by 3-digit numbers.

Example: 2 367 x 358

Breaking Down Method:

$$2\ 000 \times 300 = 600\ 000$$

$$300 \times 300 = 90\ 000$$

$$60 \times 300 = 18\ 000$$

$$7 \times 300 = 2\ 100$$

$$2\ 000 \times 50 = 100\ 000$$

$$300 \times 50 = 15\ 000$$

$$60 \times 50 = 3\ 000$$

$$7 \times 50 = 350$$

$$2\ 000 \times 8 = 16\ 000$$

$$300 \times 8 = 2\ 400$$

$$60 \times 8 = 480$$

$$7 \times 8 = 56$$

$$= \underline{847\ 386}$$

In this method we break down both numbers.

2 367 is multiplied with 358. So, to make it easier, we multiply by 300 first, then 50 and then by 8.

- Break down 2 367
- Multiply each part with 300
- Break down 2 367 again
- Multiply each part with 50
- Break down 2 367 again.
- Multiply each part with 8
- Add all the answers together.

Very Important:

Remember your **Place Values** when writing down the multiplication answers.

Notice that my units, tens, hundreds, thousands and ten thousands all line up with each other.

If your Place Values are not correct when writing down the multiplication answers, then you will have trouble adding everything together.

Example: 2 367 x 58

Vertical Column Method:

+1 +2 +2

+1 +3 +3

+2 +5+5

2 367

X 358

18 936

118 350

+ 710 100

847 386

In this Method we work from the back going to the front.

(Like when we add or subtract)

- Start with the Unit (The 8).
- You will multiply 2 367 with the 8 exactly like in the previous example.
- Now we move on to multiply with the Ten (The 50).
- Remember: When we multiply with a Ten, our answer gets a zero at the back. Because we are working front the back to the front – You write down the zero on the next line before you start to multiply.
- Now, because we have already written down the zero, we are only going to multiply with a 5 (Not 50).
- Multiply 2 367 with 5. Follow the steps from the example before.
- Now we move on to multiply with the Hundred (The 300).
- Remember: When we multiply with a Hundred, our answer gets two zeros at the back. Because we are working front the back to the front – You write down two zeros on the next line before you start to multiply.
- Now, because we have already written down the two zeros, we are only going to multiply with a 3 (Not 300).
- Multiply 2 367 with 3. Follow the steps from the example before.
- Add the three answers together to get the final answer.

Multiples

Multiples of a number are all the numbers that are products of the number.

In easier terms: **COUNTING IN THE NUMBER**

Multiples of 3:

3, 6, 9, 12, 15, 18, 21, 24, 27, 30....

Multiples of 7:

7, 14, 21, 28, 35, 42, 49, 56, 63, 70....

Factors

A factor is a whole number that will divide exactly into another whole number.

Factors of 14:

1, 2, 7 and 14

You can also ask yourself: "What x What will give me 14?"

1 x 14

2 x 7

Because you multiply those numbers to make 14, it means they