

Multiplication by One digit Number

We have learnt multiplication of 3 digit numbers by 1 and 2 digit numbers. We will use same method for multiplication of 4 or 5 digit numbers by 1, 2 and 3 digit numbers without or with carrying. Few examples are given below.

Example 1. Multiply 2143 by 2

Solution.

	Th	H	T	O
	2	1	4	3
X				2
				6

Multiply ones first
 $3 \times 2 = 6$ ones

	Th	H	T	O
	2	1	4	3
X				2
			8	6

Multiply tens place
 $4 \times 2 = 8$

	Th	H	T	O
	2	1	4	3
X				2
		2	8	6

Multiply hundreds place
 $1 \times 2 = 2$

	Th	H	T	O
	2	1	4	3
X				2
	4	2	8	6

Multiply thousands place
 $2 \times 2 = 4$

$$2143 \times 2 = 4286$$

So, the answer is 4286.

Example 2. Multiply 32132 by 3

Solution.

Multiply ones, then tens, then hundreds, then thousands and at last ten-thousands.

	T-th	Th	H	T	O
	3	2	1	3	2
X					3
	9	6	3	9	6

So, the answer is 96396.

Multiplication by Two Digit Number

Example 1. Multiply 85 by 24

Solution. $85 \times 24 = 85 \times (20 + 4)$

$$= 85 \times 20 + 85 \times 4$$

$$= 1700 + 340$$

$$= 2040$$

Example 2. Multiply 286 by 32

Solution. $286 \times 32 = 286 \times (30 + 2)$

$$= 286 \times 30 + 286 \times 2$$

$$= 8580 + 572$$

$$= 9152$$

Example 3. Multiply 2523 by 47

Solution. $2523 \times 47 = 2523 \times (40 + 7)$

$$= 2523 \times 40 + 2523 \times 7$$

$$= 100920 + 17661$$

$$= 118581$$

Example 4. Multiply 2523 by 37

Solution.

Step 1.

		Th	H	T	O
		3	1	2	
		2	5	2	3
	X			3	7
	1	7	6	6	1

Multiply ones first

2523 X 7

Step 2.

		Th	H	T	O
		1			
		3	1	2	
		2	5	2	3
	X			3	7
	1	7	6	6	1
	+	7	5	6	9

Multiply tens

2523 X 3

Step 3.

		Th	H	T	O
		1			
		3	1	2	
		2	5	2	3
	X			3	7
	1	7	6	6	1
	+	7	5	6	9
		9	3	3	5
					1

Add 17661 and 75690

So, the answer is 93351.

Multiplication by Three digit Number

Example 1. Multiply 234 by 243

Solution. $234 \times 243 = 234 \times (200 + 40 + 3)$

$= 234 \times 200 + 234 \times 40 + 234 \times 3$

$= 46800 + 9360 + 702 = 56862$

Example 2. Multiply 5342×245

Solution. $5342 \times 245 = 5342 \times (200 + 40 + 5)$

$= 5342 \times 200 + 5342 \times 40 + 5342 \times 5$

$= 1068400 + 213680 + 26710$

$= 1308790$

Story Time Multiplication

In our day to day life we use concept of multiplication in many ways, few examples are shown below.

Example 1. A cycle costs \$ 185. Find the cost of 25 such chairs?

Solution. Cost of 1 cycle = \$ 185

Cost of 25 cycles = \$ 185×25

	H	T	O
	1	8	5
X		2	5
	9	2	5
3	7	0	0
4	6	2	5

So, the cost of 25 cycles are \$ 4625.

Example 2. Each student was given 15 chocolates in a school. There are 1526 students in the school. How many total number of chocolates were distributed among all students?

Solution. Each student got chocolates = 15

Number of chocolates 1526 students will get = 1526×15

	Th	H	T	O
	1	5	2	6
X			1	5
	7	6	3	0
1	5	2	6	0
2	2	8	9	0

Total number of chocolates were distributed in the school are 22890.

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