

Subject :- Maths

Class :- 5

Chapter :- 3 [part :- III]
[Multiplication]

In earlier class, we have learnt the multiplication of 3 or 4-digit numbers. Now, here we will more about it, but before attempting these questions let us remember once again the basic properties of multiplication and division.

∴ Properties of multiplication :-

1. Order property of multiplication :- The product of two numbers does not change when the order of the number is changed.

Thus,

• $35 \times 29 = 29 \times 35$

• $175 \times 286 = 286 \times 175$ etc

2. Grouping property of multiplication :- The product of three numbers does not change when the grouping of the numbers is changed.

Thus

• $13 \times (21 \times 38) = (13 \times 21) \times 38$

• $185 \times (226 \times 743) = (185 \times 226) \times 743$

etc.

3. Distributive property of multiplication over addition :-

We have

- $42 \times (70 + 45) = (42 \times 70) + (42 \times 45)$
 - $135 \times (375 + 125) = (135 \times 375) + (135 \times 125)$
- etc.

4. Multiplicative property of 1 :- If a number is multiplied by 1, the product is the number itself.

$$(\text{Any number}) \times 1 = \text{the number itself.}$$

Thus

- $356 \times 1 = 356$
 - $1056 \times 1 = 1056$
- etc.

5. Multiplicative property of zero (0) :- If a number is multiplied by 0, the product is 0.

$$(\text{Any number}) \times 0 = 0$$

Thus,

- $835 \times 0 = 0$
 - $3854 \times 0 = 0$
- etc.

Multiplication of a number by 10, 100, 1000 :-

1. Multiplication of a number by 10 :-

To multiply a number by 10, insert one zero on the right of the given number.

Thus,

- $425 \times 10 = 4250$
- $2367 \times 10 = 23670$ etc.

2. Multiplication of a number by 100 :-

To multiply a given number by 100, insert two zeros on the right of the given number.

Thus,

- $35 \times 100 = 3500$
 - $672 \times 100 = 67200$
- etc.

3. Multiplication of a number by 1000 :-

To multiply a given number by 1000, insert three zeros on the right of the given number.

Thus,

- $3 \times 1000 = 3000$
 - $72 \times 1000 = 72000$
- etc.

∴ Multiplication of a number by a multiple of
10, 100, 1000 etc. :-

Let us clear the idea by reading the following
examples :-

Example :- find the products :-

a) 356×30

Solution :- (a) 356×30
 $356 \times 3 \times 10$
 $(356 \times 3) \times 10$
 1068×10
 $= 10680$

b) 1728×70

(b) 1728×70
 $1728 \times 7 \times 10$
 $(1728 \times 7) \times 10$
 12096×10
 $= 120960$

c) 175×200

175×200
 $175 \times 2 \times 100$
 $(175 \times 2) \times 100$
 350×100
 $= 35000$

d) 3849×400

3849×400
 $3849 \times 4 \times 1000$
 $(3849 \times 4) \times 1000$
 15396×1000
 $= 15396000$

e) 367×5000

367×5000
 $367 \times 5 \times 1000$
 $(367 \times 5) \times 1000$
 1835×1000
 $= 1835000$

f) 4053×8000

4053×8000
 $4053 \times 8 \times 1000$
 $(4053 \times 8) \times 1000$
 32424×1000
 $= 32424000$

∴ Exercise Time :-1. Fill in the blanks :-

a) $2354 \times \underline{\hspace{2cm}} = 1896 \times 2354$

b) $3905 \times 6855 = 6855 \times \underline{\hspace{2cm}}$

c) $7643 \times \underline{\hspace{2cm}} = 0$

d) $45 \times (100 + 95) = (45 \times 100) + (45 \times \underline{\hspace{2cm}})$

e) $8776 \times \underline{\hspace{2cm}} = 8776$

f) $\underline{\hspace{2cm}} \times (1035 \times 287) = (356 \times 1035) \times 287$

2. Fill in the blanks :-

a) $3517 \times 10 = \boxed{\hspace{2cm}}$

b) $73465 \times 1000 = \boxed{\hspace{2cm}}$

c) $7 \times 100 = \boxed{\hspace{2cm}}$

d) $1834 \times 1000 = \boxed{\hspace{2cm}}$

e) $342 \times 10 = \boxed{\hspace{2cm}}$

3. Fill in the blanks :-

a) 7236×50

b) 357×800

c) 9996×4000

d) 3878×90

e) 28979×30

f) 42×700

Example :- Multiply 2679×453

Solution :-

First Method

$$453 = 400 + 50 + 3$$

$$\therefore 2679 \times 453$$

$$= 2679 \times (400 + 50 + 3)$$

$$= 2679 \times 400 + 2679 \times 50 + 2679 \times 3$$

$$= 1071600 + 133950 + 8037$$

$$= 1213587$$

Second Method [shorter form]

$$\begin{array}{r}
 2679 \\
 \times 453 \\
 \hline
 8037 \quad \leftarrow 2679 \times 3 \\
 133950 \quad \leftarrow 2679 \times 50 \\
 1071600 \quad \leftarrow 2679 \times 400 \\
 \hline
 1213587 \quad \leftarrow 2679 \times 453
 \end{array}$$

Example :- Multiply 8256 by 2348

Solution :-

$$\begin{array}{r}
 8256 \\
 \times 2348 \\
 \hline
 66048 \quad \leftarrow 8256 \times 8 \\
 330240 \quad \leftarrow 8256 \times 40 \\
 2476800 \quad \leftarrow 8256 \times 300 \\
 16512000 \quad \leftarrow 8256 \times 2000 \\
 \hline
 19385088 \quad \leftarrow 8256 \times 2348
 \end{array}$$

∴ Exercise Time :-

1. Find the following products :-

- a) 40356 by 145
- b) 15796 by 8996
- c) 35617 by 9035
- d) 8954 by 1780
- e) 50023 by 3748
- f) 36748 by 1053

2. Multiply :-

a)
$$\begin{array}{r} 3064 \\ \times 572 \\ \hline \end{array}$$

b)
$$\begin{array}{r} 8759 \\ \times 1849 \\ \hline \end{array}$$

e)
$$\begin{array}{r} 7988 \\ \times 1643 \\ \hline \end{array}$$

d)
$$\begin{array}{r} 9358 \\ \times 5709 \\ \hline \end{array}$$

e)
$$\begin{array}{r} 6845 \\ \times 3981 \\ \hline \end{array}$$

f)
$$\begin{array}{r} 7800 \\ \times 2564 \\ \hline \end{array}$$

g)
$$\begin{array}{r} 3564 \\ \times 58 \\ \hline \end{array}$$

h)
$$\begin{array}{r} 6993 \\ \times 568 \\ \hline \end{array}$$

3. 3568 toys can be packed in one carton. How many toys can be packed in 1256 such cartons?

4. A newspaper contains 173 columns. Each column contains 175 lines. Each line has 42 letters. How many letters are there in the newspaper?
5. The cost of a bike is ₹ 43567. Find the cost of 356 bikes.
6. 7856 people can sit in aeroplane. How many people could it in 879 such aeroplanes?
7. A bundle of rope measure 746 meters. How many rope will be there in 2756 such bundles?
8. A cloth will produces 3794 meters of cloth in a day. How much cloth will it produces in 746 days?