Multiplication

1) Multiplication is **repeated addition.**

2) The number which is to be multiplied or repeated is called **multiplicand**.

3) The number which expresses how often the multiplicand is repeated is called the **multiplier**.

4) The answer which you obtained after multiplication is called **product**.

$$\text{Formula :-} \quad \text{Multiplier} \times \text{Multiplicand} = \text{Product}$$

Eg:- 2 + 2 + 2 + 2 + 2 + 2 = 6 x 2 = 12

5) The multiplier and multiplicand are also called **factors**.

Properties of Multiplication

1. Changing the order of factors does not change the product.

   Example: $12 \times 7 = 7 \times 12 = 84$

2. The product of any number and 1 is the number itself.

   Example: $345 \times 1 = 1 \times 345 = 345$

3. Changing the grouping of factors does not change the product.

   Example: $2 \times (4 \times 9) = 2 \times 36 = 72$; $(2 \times 4) \times 9 = 8 \times 9 = 72$

   $$\therefore 2 \times (4 \times 9) = (2 \times 4) \times 9 = 72.$$

4. The product of any number and 0 is 0.

   Example: $79014 \times 0 = 0$

Quick Assessment

Fill in the blanks.

1. 80 × 10000 = _____
2. 465 × 100000 = _____
3. 72 × 20000 = _____
4. 24 × 4000 = _____
5. 200 × 30000 = _____
6. 1500 × 5000 = _____
7. _____ × 90000 = 27000000
8. 5000 × _____ = 550000000

This is homework. Do it in book only

Self Practice 5B

1. Write the product.

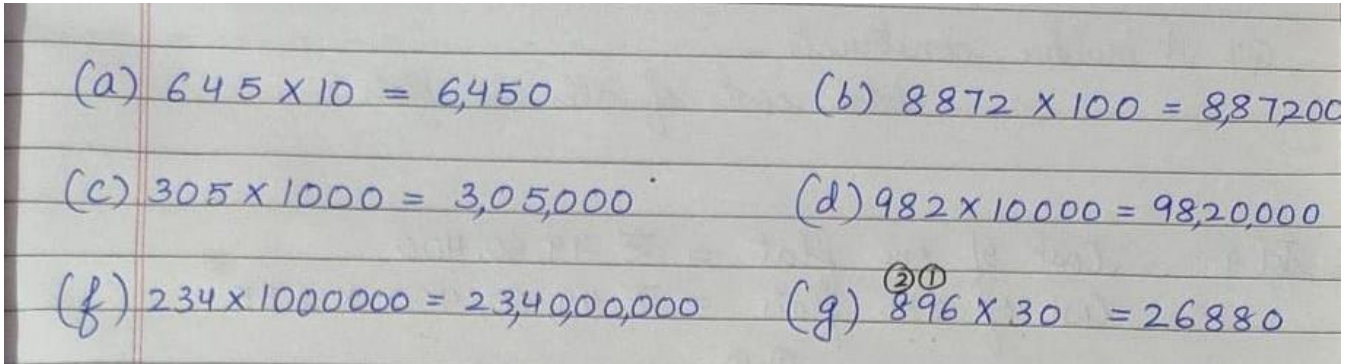   (a) 645 × 10   (b) 8872 × 100   (c) 305 × 1000   (d) 982 × 10000

    (e) 549 × 100000   (f) 234 × 1000000   (g) 896 × 30   (h) 732 × 400

Solution 1:-

(a) 645 × 10 = 6,450   (b) 8872 × 100 = 8,87,200

(c) 305 × 1000 = 3,05,000   (d) 982 × 10000 = 98,20,000

(f) 234 × 1000000 = 23,40,00,000   (g) 896 × 30 = 26880

> **In Q1. (e) , (h) are homework.**

2. Multiply:

    (a) 80125 × 74   (b) 79725 × 846   (c) 496832 × 791   (d) 7850 × 6925

    (e) 391526 × 865   (f) 65839 × 6007   (g) 47035 × 5600   (h) 70095 × 950

Solution 2:-

(a)
```
      80125
    ×    74
     320500
    560875 X
    5929250
```

(c)
```
     496832
    ×    791
     496832
   4471488 X
  3477824 X X
  392994112
```

(e)
```
     391526
    ×    865
    1957630
   2349156 X
  3132208 X X
  338669990
```

(g)
```
      47035
    ×  5600
      00000
     00000 X
    282210 X X
   235175 X X X
   263396000
```
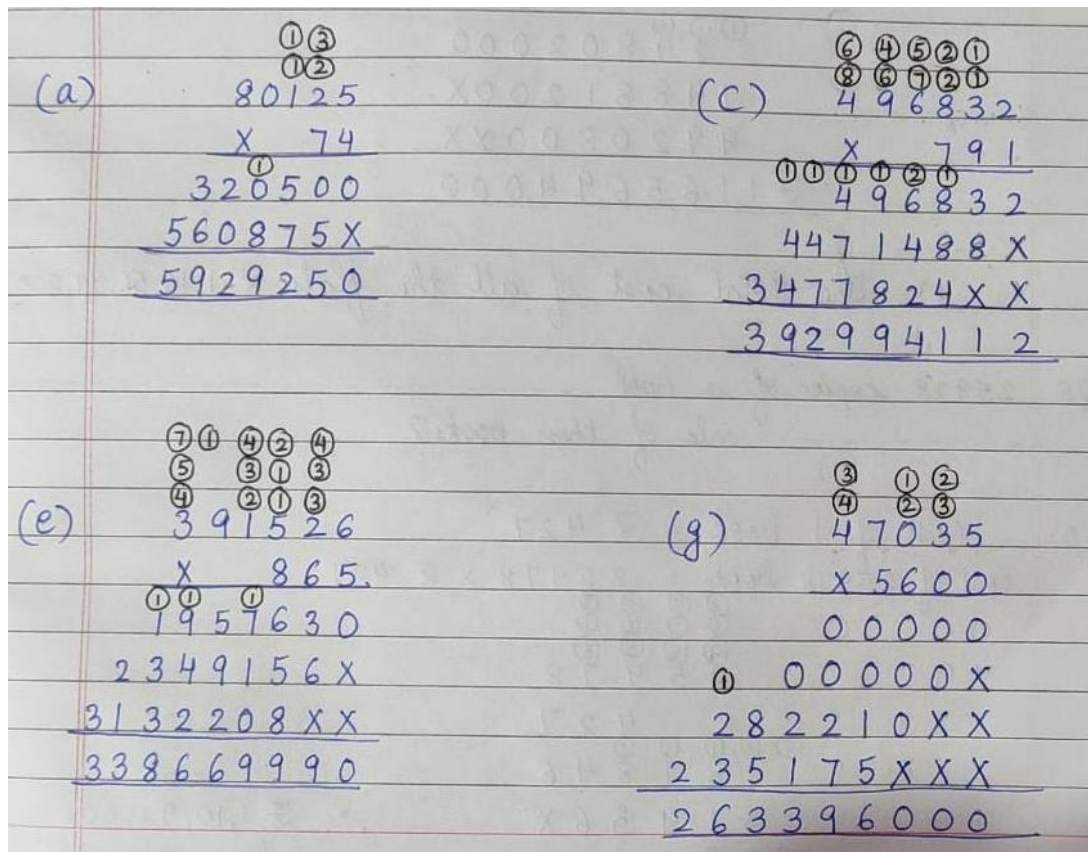
> **In Q2. (b) , (d) , (f) , (h) are homework.**

3. In a relief fund for the victims of a cyclone-hit state, each family of a city donated ₹ 250. If the number of families in the city was 124827, find the total amount donated by them for the fund.

Solution 3:- **This question is homework .**

4. A builder constructs 235 flats in a society. If each flat costs ₹ 49,60,400, what is the total cost of all the flats?

Solution 4:-

Cost of one flat = ₹ 49,60,400
Cost of 235 flats = ₹ 49,60,400 × 235

$$
\begin{array}{r}
₹ 4\,9\,60\,400 \\
\times\ \ \ 2\,3\,5 \\
\hline
2\,4\,8\,0\,2\,0\,0\,0 \\
1\,4\,8\,8\,1\,2\,0\,0\,\text{X} \\
9\,9\,2\,0\,8\,0\,0\,\text{XX} \\
\hline
₹ 1,16,56,94,000 \\
\hline
\end{array}
$$

∴ The total cost of all the flats ₹ 1,16,56,94,000.

5. 25978 copies of a book were sold during a year. If each book costs ₹ 427, how much is earned from the sale of these books?

Solution 5:-

Sol 5:- Cost of 1 book = ₹ 427
Cost of 25978 books = 25978 × ₹ 427

$$
\begin{array}{r}
2\,5\,9\,7\,8 \\
\times\ \ \ 4\,2\,7 \\
\hline
1\,8\,1\,8\,4\,6 \\
5\,1\,9\,5\,6\,\text{X} \\
1\,0\,3\,9\,1\,2\,\text{XX} \\
\hline
1\,1\,0\,9\,2\,6\,0\,6 \\
\hline
\end{array}
$$

∴ ₹ 1,10,92,606 is earned from the sale of these books.