SESSION : 6
CLASS : IV
SUBJECT : MATHEMATICS
CHAPTER NUMBER : 10
CHAPTER NAME : FACTORS AND MULTIPLES
SUBTOPIC : FACTORS AND PROPERTIES OF
FACTORS, EX-10 A

CHANGING YOUR TOMORROW

LEARNING OBJECTIVE

- **Enable the students to understand the concept of factors and properties of factors.**

FACTORS AND MULTIPLES

FACTORS

Let us recall the table of 5

5	×	1	=	5
5	×	2	=	10
5	×	3	=	15
5	×	4	=	20
5	×	5	=	25
5	×	6	=	30
5	×	7	=	35
5	×	8	=	40
5	×	9	=	45
5	×	10	=	50

When we multiply **2** numbers, each of the numbers being multiplied is called a factor of the product.

Here, 5 × 1 = **5** ; 5 × 4 = **20** ; etc.

Factor of 5   Factor of 5   Factor of 20   Factor of 20

Similarly, 8 × 9 = 72. So, 8 and 9 are factors of 72.

Note : 1. For a number to be a factor of any number, it has to completely divide that number without leaving any remainder.
2. every number will have at least 2 factors, 1 and the number itself.

FACTORS AND MULTIPLES

Properties of Factors

1. **1** is a factors of each number. Each number can be written as a product of **1** and the number itself.

Example: **15** = 1 × 15

36 = 1 × 36

17 = 1 × 17

FACTORS AND MULTIPLES

Properties of Factors

2. **1** is the only number which has only one factors.

FACTORS AND MULTIPLES

Properties of Factors

3. A factors of a number (other than zero) is either less than or equal to the number itself.

For Example: **12 = 1 × 12**;   **2 × 6**;   **3 × 4**

So, factors of **12** are **1**, **2**, **3**, **4**, **6** and **12**.

1 is the smallest factors and the number itself is the greatest factors i.e. **12**. Therefore, a factor of a number is either less than or equal to itself.

FACTORS AND MULTIPLES

Properties of Factors

Example: 1 Find all the factors of 30.

$$1 \times 30 = 30$$

$$2 \times 15 = 30$$

$$3 \times 10 = 30$$

$$5 \times 6 = 30$$

So, the factors of **30** are **1**, **2**, **3**, **5**, **6**, **10**, **15** and **30** itself.

FACTORS AND MULTIPLES

Properties of Factors

Example: 2   Is 9 a factor of 110?

Let us divide 110 by 9 =

$$
\begin{array}{r}
1\ \ 2 \\
9\ \overline{)\ 1\ \ 1\ \ 0\ } \\
-\ \ \ \ 9\ \ \ \downarrow \\
\hline
0\ \ 2\ \ 0 \\
-\ \ \ \ 1\ \ 8 \\
\hline
0\ \ 2 \\
\end{array}
$$

Since, 9 does not completely divide 110 and leaves 2 as a remainder, 9 is not a factor of 110.

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FACTORS AND MULTIPLES

EXERCISE – 10(A)

1) Fill in the blanks.

   (a) 5 × 6 = 30, __**5**__ and __**6**__ are factors of 30.

   (b) 7 × 4 = 28, __**7**__ and __**4**__ are factors of 28.

   (c) Factors of 15 are __**1**__, __**3**__, __**5**__, __**15**__.

   (d) Factors of 49 are __**1**__ and __**7**__, __**49**__.

   (e) __**1**__ is a factor of every number.

FACTORS AND MULTIPLES

EXERCISE – 10(A)

2) Tick (✓) the first number if it a factor of the second number:

(a) 7; 147 ✓ . **(b)** 4; 264 ✓ . **(c)** 4; 1728 ✓ . **(d)** 5; 1055 ✓ .

(e) 5; 17560 ✓ . **(f)** 7; 2148 ✗ . **(g)** 7; 3507 ✓ . **(h)** 9; 216 ✓ .

(i) 11; 10,825 ✗ . **(j)** 11; 572 ✓ . **(k)** 12; 847 ✗ . **(l)** 37; 71344 ✗ .

FACTORS AND MULTIPLES

3) List all the factors of the following numbers:

(a) 14 ___**1, 2, 7, 14**___ .

(b) 15 ___**1, 3, 5, 15**___ .

(c) 18 ___**1, 2, 3, 6, 9, 18**___ .

(d) 27 ___**1, 3, 9, 27**___ .

FACTORS AND MULTIPLES

EXERCISE – 10(A)

3) List all the factors of the following numbers:

(e) 42 <u> 1, 2, 3, 6, 7, 21, 42 </u> .

(f) 50 <u> 1, 2, 5, 25, 10, 50 </u> .

(g) 64 <u> 1, 2, 4, 8, 16, 32, 64 </u> .

(h) 13 <u> 1, 13 </u> .

FACTORS AND MULTIPLES

EXERCISE – 10(A)

3) List all the factors of the following numbers:

(i) 19 ___1, 19___ .

(j) 96 ___1, 2, 3, 4, 6, 8, 12, 16, 24, 32, 48, 96___ .

(k) 120 ___1, 2, 3, 4, 5, 6, 8, 10, 12 , 15, 20, 24, 30, 40, 60, 120___ .

(l) 72 ___1, 2, 3, 4, 6, 8, 9, 12 , 18, 24, 36, 72___ .

FACTORS AND MULTIPLES

4) Write all the factors of 56. is 5 a factor of 56? Why?

The all factors of 56 =   **1, 2, 4, 7, 8, 14, 28, 56**

As per rule, A number is divisible by **5** if its last digit (one's digit) is either **zero** or **5**

56 is not divisible by **5**, as **56** last digit is **6**.

So, **5** is not a factor of **56**.

HOME ASSIGNMENT:

➢ **Complete Exercise – 10 A in your note book.**

LEARNING OUTCOME:

Students are able to understand the concept of factors and properties of factors.

THANKING YOU
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