MONTH : AUGUST

SESSION : 1

CLASS : V

SUBJECT : MATHEMATICS

CHAPTER NUMBER: 8

CHAPTER NAME : FACTORS AND MULTIPLES

SUB-TOPIC : GCF OR HCF: LISTING METHOD

EXERCISE : 8 B Q.NO. 1,2,3

HIGHEST COMMON FACTOR

The **GCF** or **HCF** is the greatest whole number that is the **common factor** of given numbers.

Example : Find the H.C.F of 18 and 24

Method 1: Listing Method

Factors of 18 = 1 , 2 , 3 , 6 , 9 , 18

Factors of 24 = 1 , 2 , 3 , 4 , 6 , 8 , 12 , 24

The common factors are: **1,2,3** and **6**

∴ **The H.C.F is 6**

Example 2 : Find the H.C.F of 8, 12 and 30

Solution:

❖ **Factors of 8 = 1, 2, 4, 8**

❖ **Factors of 12 = 1, 2 , 3 , 4, 6, 12**

❖ **Factors of 30 = 1, 2 , 3 , 5, 6, 10, 15, 30**

▢ **The common factors are: 1 , 2**

∵ **The H.C.F =2**

1. Find the H.C.F of 27 and 36

Solution:

Factors of 27 = **1 , 3, 9, 27**

Factors of 36 = **1, 2 , 3, 4, 6, 9, 12,18, 36**

Common factors of 27 and 36 are: 1, 3 and 9

∴ **The H.C.F is 9**

2. Find the H.C.F of 82 and 104

□ **Solution:**

Factors of 82 : **1 , 2 , 41 , 82**

Factors of 104: **1 , 2 , 4 , 8 , 13 , 26 , 52 , 104**

Common factor of 84 and 104 are: 1 , 2

∴ **The H.C.F is 2**

3. Find the common factors and H.C.F of 20, 35 and 40

Solution:

Factors of 20: **1 , 2 , 4 , 5 , 10 , 20**

Factors of 35: **1 , 5 , 7 , 35**

Factors of 40: **1 , 2 , 4 , 5 , 8 , 10 , 20 , 40**

The common factors of 20, 35 and 40 are 1 and 5

∴The H.C.F is 5

☐Home assignment: Complete Ex.8 [B] Q.No.4 and 5 in the notebook.

Students are able

- **To understand the concept of factors.**

- **To understand to find out common factors and highest common factor.**

THANKING YOU
ODM EDUCATIONAL GROUP

MONTH : AUGUST

SESSION : 2

CLASS : V

SUBJECT : MATHEMATICS

CHAPTER NUMBER: 8

CHAPTER NAME : FACTORS AND MULTIPLES

SUB-TOPIC : HIGHEST COMMON FACTOR - PRIME FACTOR METHOD,

EXERCISE : 8 [B] Q.NO. 6

The **GCF** or **HCF** is the greatest whole number that is the **common factor** of given numbers.

Example : Find the H.C.F of 18 and 24

Solution :

Prime factor method (Method 1)

2	18
3	9
3	3
	1

2	24
2	12
2	6
3	3
	1

Prime factors of 18 = 2× 3 × 3
Prime factors of 24 = 2 × 2 × 2 × 3
Common factors of 18 and 24 are 2 and 3 .
So H.C.F of 18 and 24 is **2 × 3 = 6**

Example : Find the H.C.F of 18 and 24

Prime factor method (Method 2)

$$
\begin{array}{c|c}
2 & 18 \,,\, 24 \\
\hline
3 & 9,\, 12 \\
\hline
& 3,\;\; 4
\end{array}
$$

So H.C.F of 18 and 24 is 2 × 3 = 6

Example 2 : Find the H.C.F of 48, 72 and 84

Solution: [METHOD 1]

2	48
2	24
3	12
2	4
2	2
	1

2	72
2	36
3	18
3	6
2	2
	1

2	84
2	42
3	21
7	7
	1

48 = 2 × 2 × 3 × 2 × 2

72= 2 × 2 × 3 × 3 × 2

84 = 2 × 2 × 3 × 7

Common factors of 48, 72 and 84 are 2, 2 and 3.

So, H.C.F. of 48, 72 and 84 is 2 × 2 × 3 = 12

Example 2 : Find the H.C.F of 48, 72 and 84

Solution: [METHOD 2]

```
2 | 48 , 72, 84
2 | 24 , 36, 42
3 | 12 , 18, 21
    4 ,   6 , 7
```

The H.C.F. = 2 × 2 × 3 = 12

6. Find the H.C.F of the following numbers by prime factor method.

a. 75 and 125

```
5 | 75 , 125
5 | 15 , 25
    3 ,   5
```

H.C.F. = 5 × 5 = 25

b. 24, 54 and 60

```
2 | 24, 54 ,60
3 | 12, 27 ,30
    4 ,  9,  10
```

H.C.F. = 2 × 3 = 6

6. Find the H.C.F of the following numbers by prime factor method.

c. 63 , 70 , 98

$$7 \mid \underline{63 , 70 , 98}$$
$$9 , \quad 10, \quad 14$$

∴ **The H.C.F is 7**

d. 112 , 210 , 252

$$2 \mid 112, 210 , 252$$
$$7 \mid \underline{56 , 105 , 126}$$
$$8 , \quad 15 , \quad 36$$

∴ **The H.C.F is 2 × 7 = 14**

6. Find the H.C.F of the following numbers by prime factor method.

e. 27 , 99 , 144

$$
\begin{array}{c|c}
3 & 27 \ , \ 99 \ , \ 144 \\
\hline
3 & 9 \ , \ \ 33 \ , \ \ 48 \\
\hline
 & 3 \ , \ \ 11 \ , \ \ 16
\end{array}
$$

H.C.F = 3 × 3 = 9

f. 175 , 250 , 300

$$
\begin{array}{c|c}
5 & 175 \ , \ 250 \ , \ 300 \\
\hline
5 & 35 \ , \ 50, \ 60 \\
\hline
 & 7 \ , \ \ 10, \ \ 12
\end{array}
$$

H.C.F.= 5 × 5 =25

The students are able

- **to understand the concept of factors and prime factors.**

- **to find out common factors and highest common factor by prime factor method.**

HOME ASSIGNMENT:

☐ **Complete Exercise 8 [B] Q.No. 6 (g) to (i) in the notebook.**

THANKING YOU
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MONTH : AUGUST

SESSION : 3

CLASS : V

SUBJECT : MATHEMATICS

CHAPTER NUMBER: 8

CHAPTER NAME : FACTORS AND MULTIPLES

SUB-TOPIC : HCF: DIVISION METHOD

EXERCISE : 8[B] Q.NO. 7

Whenever we are asked to find out the H.C.F. of large numbers we always use the division method.

Example : Find the H.C.F of 300 and 888

```
              2
   300 | 888
       | 600        1
       | 288 | 300
       |     | 288        2 4
       |     | 1 2 | 288
       |     |     | 24
       |     |     ----------
       |     |       4 8
       |     |       4 8
       |     |      ----------
       |     |         0
```

H.C.F. = 12, Because 12 is the last divisor.

When we are asked to find out the H.C.F. of more than 2 numbers, 1st we find out the H.C.F. of the largest and second largest number.

STEP – 1

```
              1
        ┌─────────
  1216  │ 2400
        │ 1216        1
        │ 1184 │ 1216
        │      │ 1184        3 7
        │      │      32 │ 1184
        │      │         │  96
        │      │            224
        │      │            224
        │      │            ─────
        │      │              0
```

H.C.F. of 1216 and 2400 = 32, Because 32 is the last divisor.

Then we find out the H.C.F. of 912 and 32[the 1st H.C.F.].

```
        2  8
   32 | 912
      | 64 ↓
        272
      - 256   2
        16 | 32
           | 32
```

0

H.C.F. of 912,1216 and 2400 = 16

7. Find the H.C.F of the following numbers by the division method.

a. 112 and 189

$$
\begin{array}{r}
1 \\
112\overline{\smash)189} \\
112 \\
\end{array}
$$

$$
\begin{array}{r}
1 \\
77\overline{\smash)112} \\
77 \\
\end{array}
$$

$$
\begin{array}{r}
2 \\
35\overline{\smash)77} \\
70 \\
\end{array}
$$

$$
\begin{array}{r}
5 \\
7\overline{\smash)35} \\
35 \\
\hline
0 \\
\end{array}
$$

The H.C.F = 7

6. Find the H.C.F of the following numbers by the division method.

b. 34, 51 and 85

$$
51\overline{)\begin{array}{l}1\\85\\51\end{array}}
$$

$$
34\overline{)\begin{array}{l}51\\34\end{array}}\,1
$$

$$
17\overline{)\begin{array}{l}34\\34\end{array}}\,2
$$

0

$$
17\overline{)\begin{array}{l}2\\34\\34\end{array}}
$$

0

∴ **H.C.F of 34 ,51 and 85 = 17**

The H.C.F of 85 and = 17

6. Find the H.C.F of the following numbers by the division method.

c. 95, 152 and 190

```
          1
  152 | 190
      | 152        4
      --------------
        38 | 152
           | 152
           --------
              0
```

The H.C.F of 190 and 152 = 38

```
          2
  38 | 95
     | 76         2
     --------------
       19 | 38
          | 38
          --------
             0
```

∴ **H.C.F of 95,152 and 190 = 19**

6. Find the H.C.F of the following numbers by the division method.

d. 650, 900 and 1000

$$
\begin{array}{r}
1 \\
900\ \overline{)\ 1000} \\
900 \\
\end{array}
$$

$$
\begin{array}{r}
9 \\
100\ \overline{)\ 900} \\
900 \\
\hline
0 \\
\end{array}
$$

The H.C.F of 1000 and 900 = 100

$$
\begin{array}{r}
6 \\
100\ \overline{)\ 650} \\
600 \\
\end{array}
$$

$$
\begin{array}{r}
2 \\
50\ \overline{)\ 100} \\
100 \\
\hline
0 \\
\end{array}
$$

∴ H.C.F of 650,900 and 1000 = 50

6. Find the H.C.F of the following numbers by the division method.

1

e. 690, 966 and 1150

```
              1
   966 | 1150
          966        5
        ──────────────
          184 | 966
                920      4
              ─────────────
                  46 | 184
                       184
                     ───────
                        0
```

The H.C.F of 1150 and 966 = 46

```
              1 5
      46 | 690
            46
          ──────
            23 0
            230
          ──────
             0
```

∴ H.C.F of 690,966 and 1150 = 46

6. Find the H.C.F of the following numbers by the division method.

f. 738 , 1080 and 1332

```
            1
1080 | 1332
       1080      4
       ──────────
        252 | 1080
              1008    3
              ──────────
               72 | 252
                    216    2
                    ──────────
                     36 | 72
                          72
                          ──────
                           0
```

The H.C.F of 1332 and 1080 = 36

```
            2
  36 | 738
       72 |      2
       ─────────────
        1  8 | 36
              36
              ──────
               0
```

∴ H.C.F of 738,1080 and 1332 = 18

HOME ASSIGNMENT:

☐ **Complete Exercise 8 [B] Q.No. 7 (g) and (h) in the notebook.**

The students are able

- To understand the concept of factors and prime factors.

- to find out common factors and highest common factor using Division method.

MONTH : AUGUST

SESSION : 4

CLASS : V

SUBJECT : MATHEMATICS

CHAPTER NUMBER: 8

CHAPTER NAME : FACTORS AND MULTIPLES

SUB-TOPIC : LEAST COMMON MULTIPLE: L.C.M.

PROPERTIES OF L.C.M.

MULTIPLES

A multiple of a number is a **product** of the number and a whole number.

Examples:
Multiples of 4 are: 4×1= **4**

4×2= **8**

4×3= **12**… etc.

LEAST COMMON MULTIPLES

The multiples that are common to two or more numbers are called the common multiples of those numbers.
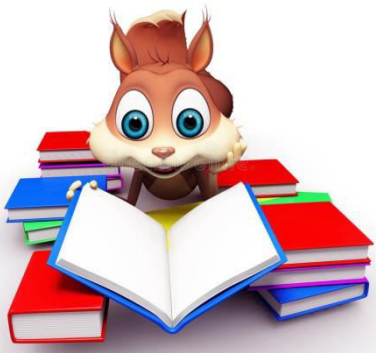
LEAST COMMON MULTIPLES

Example:

Multiples of 5 ⟶ **5, 10, 15, 20, 25, 30, 35, 40, 45, 50**

Multiples of 4 ⟶ **4, 8, 12, 16, 20, 24, 28, 32, 36, 40**

Common multiples are : 20, 40

Least common multiple = 20

PROPERTIES OF LEAST COMMON MULTIPLES

1. The L.C.M. of two prime numbers is their product.

☐ **Example: The L.C.M. of 3 and 5 is 15 or 7 and 11 is 77.**

2. If a number is a factor of another number , then their L.C.M. is the greater number.

☐ **Example: The L.C.M. of 3 and 9 is 9 or L.C.M. of 5 and 40 is 40.**

PROPERTIES OF LEAST COMMON MULTIPLES

3. The L.C.M. of two or more numbers cannot be less than either of them.

☐ **Example: L.C.M. of 5 and 9 is 45**

4. The L.C.M. of two consecutive number is the product of the numbers.

☐ **Example: L.C.M. of 5 and 6 is 30.**

The students are able

- **To understand the concept of Multiples and Least common multiple.**

- **To find out common multiples and L.C.M.**

THANKING YOU
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L.C.M. BY PRIME FACTOR METHOD

Example 1: Find the L.C.M. of 12, 15 and 24

Prime factors of 12 = 2 × 2 × 3

Prime factors of 24 = 2 × 2 × 2 × 3

Prime factors of 15 = 3 × 5

Common Prime factors are: 3

Remaining common prime factor: 2 , 2

Uncommon prime factor : 2 and 5

L.C.M. = 3 × 2 × 2 × 2× 5 = 120

The L.C.M. of 12, 15 and 24 is 120.

L.C.M. by Prime factor method

Example 2: Find the L.C.M. of 20, 30 and 35

Prime factors of 30 = 3 × 5 × 2

Prime factors of 20 = 2 × 5 × 2

Prime factors of 35 = 7 × 5

Common Prime factors are: 5

Remaining common prime factor: 2

Uncommon prime factor : 3,2,7

L.C.M. = 5 × 2 × 3 × 2 × 7 = 420

The L.C.M. of 20, 30 and 35 is 420.

1. Write the prime factors of each number and find the L.C.M.

a. 36 and 63

Prime factors of 36 = 2 × 2 × 3 × 3

Prime factors of 63 =   7 × 3 × 3

L.C.M. = 3 × 3 × 2 × 2 × 7 = 252

The L.C.M. of 36 and 63 is 252.

1. Write the prime factors of each number and find the L.C.M.

    b. 11 and 55

     Prime factors of 11 = 1 × 11

     Prime factors of 55 = 5 × 11

    L.C.M. = 11 × 5 ×1 = 55

     The L.C.M. of 11 and 55 is 55.

1. Write the prime factors of each number and find the L.C.M.

c. 25 and 100

Prime factors of 25 = 5 × 5

Prime factors of 100 = 5 × 5 × 2× 2

L.C.M. = 5× 5 × 2 ×2 = 100

The L.C.M. of 25 and 100 is 100.

1. Write the prime factors of each number and find the L.C.M.

d. 9, 36 and 45

Prime factors of 9 = 3 × 3

Prime factors of 36 = 3 × 3 × 2 × 2

Prime factors of 45 = 3 × 3 × 5

L.C.M. = 3 × 3 × 2 × 2 × 5 = 180

The L.C.M. of 9, 36 and 45 is 180.

EXERCISE 8 [C]

1. Write the prime factors of each number and find the L.C.M.

e.12, 15, 18 and 36

Prime factors of 12 = 3 × 2 × 2

Prime factors of 15 = 3 × 5

Prime factors of 18 = 3 × 3 × 2

Prime factors of 36 = 3 × 3 × 2 × 2

L.C.M. = 3 × 3 × 2 × 2 × 5 = 180

The L.C.M. of 12, 15, 18 and 36 180.

1. Write the prime factors of each number and find the L.C.M.

f. 20, 50 , 60 and 100

Prime factors of 20 = 2 × 2 × 5

Prime factors of 50 = 2 × 5 ×5

Prime factors of 60 = 2 × 2 × 5 × 3

Prime factors of 100 = 2 × 2 ×5 × 5

L.C.M. = 2 × 5 × 2 × 5 × 3 = 300

The L.C.M. of 20, 50, 60 and 100 is 300.

□**HOME ASSIGNMENT : Complete Exercise 8 C Q.No. 1 [g] and [h] in the notebook.**

Students are able

- **To Understand the concept of Multiples and Least common multiple.**

- **To find out common multiples and L.C.M.**

THANKING YOU

ODM EDUCATIONAL GROUP

MONTH : AUGUST

SESSION : 6

CLASS : V

SUBJECT : MATHEMATICS

CHAPTER NUMBER: 8

CHAPTER NAME : FACTORS AND MULTIPLES

SUB-TOPIC : LEAST COMMON MULTIPLE: L.C.M. BY

COMMON DIVISION METHOD. EXERCISE 8 C Q.NO.2

CHANGING YOUR TOMORROW

Example 1: Find the L.C.M. of 20, 25, 30 and 36

```
  2 | 20 ,25,   30, 36
  2 | 10, 25,   15, 18
  3 | 5  , 25,  15,  9
  3 | 5  , 25,   5,  3
  5 | 1  , 25,   5,  1
  5 | 1  ,  5,   1,  1
    | 1 ,  1,    1,  1
```

L.C.M. = 2 × 2 × 3 × 3 × 5 × 5 = 900

L.C.M. BY COMMON DIVISION METHOD

Example 2: Find the L.C.M. of 9, 36 and 45

```
3 | 9   36  45
3 | 3   12  15
2 | 1    4   5
2 | 1    2   5
5 | 1    1   5
  | 1    1   1
```

L.C.M = 3 × 3 × 2 × 2 × 5 = 180

Find the L.C.M. of each numbers using division method

a. 22, 44, 66

2	22	44	66
1	1	22	33
1 2	1	2	3
3	1	1	3
	1	1	1

L.C.M = 2 × 11 × 2 × 3 = 132

Find the L.C.M. of each numbers using division method

b. 9, 12, 18, 24

```
2 | 9, 12, 18, 24
3 | 9    6    9    12
2 | 3    2    3    4
3 | 3    1    3    2
2 | 1    1    1    2
  | 1    1    1    1
```

L.C.M = 2 × 3 × 2 × 3 × 2 = 72

Find the L.C.M. of each numbers using division method

c. 8, 40, 54,135

2	8,	40,	54,	135
3	4	20	27	135
3	4	20	9	45
3	4	20	3	15
2	4	20	1	5
2	2	10	1	5
5	1	5	1	5
	1	1	1	1

L.C.M = 2 × 3 × 3 × 3 × 2 ×2 ×5 = 1080

Find the L.C.M. of each numbers using division method

d. 21, 33, 42, 44

```
3 | 21, 33,  42,  44
7 | 7    1   14   44
2 | 1    1    2   44
2 | 1    1    1   22
1 | 1    1    1    1
1 | 1    1    1    1
```

L.C.M = 3 × 7 × 2 × 2 × 11 = 924

Find the L.C.M. of each numbers using division method

e. 15, 30, 60, 90

```
3 | 15, 30, 60, 90
2 | 5   10   20   30
5 | 5    5   10   15
3 | 1    1    2    3
2 | 1    1    2    1
  | 1    1    1    1
```

L.C.M = 3 × 2 × 5 × 3 × 2 = 180

Find the L.C.M. of each numbers using division method

f. 25, 50, 55, 110

5	25, 50, 55, 110
5	5 10 1 22
1	1 2 1 22
2	1 2 1 2
	1 1 1 1

L.C.M = 5 × 5 × 2 ×11 = 550

HOME ASSIGHMENT : Complete Exercise 8 C Q.No. 2 [g] and [h] in the notebook.

Students are able

- To Understand the concept of Multiples and Least common multiple.

- To find out common multiples and L.C.M.

THANKING YOU
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MONTH : AUGUST

SESSION : 7

CLASS : V

SUBJECT : MATHEMATICS

CHAPTER NUMBER: 8

CHAPTER NAME : FACTORS AND MULTIPLES

SUB-TOPIC : RELATION BETWEEN H.C.F. , L.C.M. AND

NUMBERS, EXERCISE 8 D Q.NO.1

Relation between H.C.F. , L.C.M. and the numbers.

1. L.C.M. × H.C.F. = Product of the two numbers.

Explanation: Consider 6 and 8

STEP. 1

$$
\begin{array}{c|cc}
2 & 6 & , & 8 \\
\hline
& 3 & , & 4
\end{array}
$$

H.C.F. of 6 and 8 = 2

STEP. 2

$$
\begin{array}{c|cc}
2 & 6 & , & 8 \\
2 & 3 & , & 4 \\
2 & 3 & , & 2 \\
3 & 3 & , & 1 \\
\hline
& 1 & , & 1
\end{array}
$$

L.C.M. of 6 and 8 = 2 × 2 × 2 × 3= 24

L.C.M. × H.C.F. = 24 × 2 = 48

Product of the two numbers = 6 × 8 = 48

∴ **L.C.M. × H.C.F. = Product of the two numbers.**

Relation between H.C.F. , L.C.M. and the numbers.

IMPORTANT RULES

i. L.C.M. of two numbers = $\dfrac{\text{Their product}}{\text{Their H.C.F.}}$

ii. H.C.F. of two numbers = $\dfrac{\text{Their product}}{\text{Their L.C.M.}}$

iii. $\dfrac{\text{L.C.M.} \times \text{H.C.F}}{\text{One number}}$ = The other number

EXAMPLE- 1 :

The H.C.F. of two number is 28 and their L.C.M. is 336. if one number is 112 , find the other number.

Solution:

$$\frac{\text{L.C.M.} \times \text{H.C.F}}{\text{One number}} = \text{The other number}$$

$\Rightarrow$ the other number $= \dfrac{28 \times \overset{3}{\cancel{336}}}{\cancel{112}} = 28 \times 3 = 84$ **Ans.**

1. Find the H.C.F. and L.C.M. of the following numbers.

a. 576 and 1440

H.C.F

```
             2
         ┌─────────
   576   │ 1440
         │ 1152        2
         │         ┌─────────
         │    288  │ 576
         │         │ 576
         │         └─────────
                        0
```

H.C.F. of 576 and 1440 = 288

1. Find the H.C.F. and L.C.M. of the following numbers.

a. 576 and 1440

L.C.M.

2	576 , 1440
2	288 , 720
2	144 , 360
3	72 , 180
3	24 , 60
2	8 , 20
2	4 , 10
2	2 , 5
5	1 , 5
	1 , 1

L.C.M. of 576 and 1440 = 2 × 2 × 2 × 2 × 2 × 2 × 3 × 3 × 5 = 2880

1. Find the H.C.F. and L.C.M. of the following numbers.

b. 496 and 1116

H.C.F

```
              2
        ┌─────────
   496  │ 1116
        │  992        4
        ┌────────────────
        124 │ 496
            │ 496
        ────────────
              0
```

H.C.F. of 496 and 1116 = 124

EXERCISE 8 [D]

1. Find the H.C.F. and L.C.M. of the following numbers.

b. 496 and 1116

L.C.M.

2	496
2	248
2	124
2	62
31	31
	1

2	1116
2	558
3	279
3	93
31	31
	1

Common multiples :

496 = 2 × 2 × 2 × 2 × 31

1116 = 2 × 2 × 3 × 3 × 31

L.C.M. of 496 and 1116 = 2 × 2 × 31 × 2 ×2 × 3 × 3 = 4464

1. Find the H.C.F. and L.C.M. of the following numbers.

H.C.F

c. 270 and 450

$$
\begin{array}{r}
1 \\
270\overline{\smash{\big)}\,450} \\
270 \\
\hline
\end{array}
$$

$$
\begin{array}{r}
1 \\
180\overline{\smash{\big)}\,270} \\
180 \\
\hline
\end{array}
$$

$$
\begin{array}{r}
2 \\
90\overline{\smash{\big)}\,180} \\
180 \\
\hline
0
\end{array}
$$

H.C.F. of 270 and 450 = 90

1. Find the H.C.F. and L.C.M. of the following numbers.

c. 270 and 450

L.C.M.

2	270
5	135
3	27
3	9
3	3
	1

2	450
5	225
5	45
3	9
3	3
	1

Common multiples :

270 = 2 × 5 × 3 × 3 × 3

450 = 2 × 5 × 5 × 3 × 3

L.C.M. of 270 and 450 = 2 × 5 × 3 × 3 × 3 × 5 = 1350

1. Find the H.C.F. and L.C.M. of the following numbers.

H.C.F

d. 465 and 1116

$$
\begin{array}{r|l}
2 & \\
\hline
465 & 1116 \\
& 930 \\
\end{array}
$$

$$
\begin{array}{r|l}
2 & \\
\hline
186 & 465 \\
& 372 \\
\end{array}
$$

$$
\begin{array}{r|l}
2 & \\
\hline
93 & 186 \\
& 186 \\
\hline
& 0 \\
\end{array}
$$

H.C.F. of 465 and 1116 = 93

EXERCISE 8 [D]

1. Find the H.C.F. and L.C.M. of the following numbers.

d. 465 and 1116

L.C.M.

```
5 | 465
3 | 93
31| 31
   | 1
```

```
2 | 1116
2 | 558
3 | 279
3 | 93
31| 31
   | 1
```

Common multiples :
465 =   5 × 3 × 31
1116 =   2 ×2 × 3 ×3 × 31

L.C.M. of 465 and 1116 = 3 × 31 × 2 × 2 × 3 × 5 = 5580

1. Find the H.C.F. and L.C.M. of the following numbers.

H.C.F

e. 408 and 1530

```
                3
        ┌──────────
  408   │ 1530
        │ 1224          1
        └────────────────────
            306 │ 408
                │ 306          3
                └────────────────
                    102 │ 306
                        │ 306
                        └────────────
                              0
```

H.C.F. of 408 and 1530 = 102

1. Find the H.C.F. and L.C.M. of the following numbers.

e. 408 and 1530

L.C.M.

2	408
2	204
2	102
3	51
17	17
	1

2	1530
5	765
3	153
3	51
17	17
	1

Common multiples :
408= 2 × 2 × 2 × 3 × 17
1530 = 2 ×5 × 3 × 3 ×17

L.C.M. of 408 and 1530 = 2 × 3 × 17 × 2 × 2 × 5 ×3 = 6120

1. Find the H.C.F. and L.C.M. of the following numbers.

H.C.F

f. 603 and 1608

```
              2
      603 | 1608
            1206        1
            _____
            402 | 603
                  402        2
                  _____
                  201 | 402
                        402
                        _____
                          0
```

H.C.F. of 603 and 1608 = 201

1. Find the H.C.F. and L.C.M. of the following numbers.

f. 603 and 1608

L.C.M.

```
3 | 603
3 | 201
67| 67
   | 1
```

```
2 | 1608
2 | 804
2 | 402
3 | 201
67| 67
   | 1
```

Common multiples :

603 =   3 × 3 × 67

1608 =   2 × 2 × 2 × 3 × 67

L.C.M. of 603 and 1608 = 3 × 67 × 2 × 2 × 2 × 3= 4824

Students are able

- **To Understand the concept of H.C.F. and L.C.M.**

- **To understand the relation between H.C.F. and L.C.M.**

THANKING YOU

ODM EDUCATIONAL GROUP

MONTH : AUGUST

SESSION : 8

CLASS : V

SUBJECT : MATHEMATICS

CHAPTER NUMBER: 8

CHAPTER NAME : FACTORS AND MULTIPLES

SUB-TOPIC : RELATION BETWEEN H.C.F. , L.C.M. AND

NUMBERS, EXERCISE 8 D Q.NO. 2 AND 3

CHANGING YOUR TOMORROW

EXAMPLE – 2
Find the smallest number of 4 digits which when divided by 6, 8, 12 and 20 leaves no remainder

☐ **According to the question we have to find the smallest number which can be divided by each of the given numbers.**

☐ **So we find the L.C.M.**

2	6 , 8 , 12, 20
2	3 , 4 , 6 , 10
3	3 , 2 , 3 , 5
2	1 , 2 , 1 , 5
5	1 , 1 , 1 , 5
	1, 1, 1, 1

L.C.M.= 2×2×3×2×5 = 120

☐ **We have to find 4 digit number, and which is the smallest multiple of 120.**

☐ **The smallest 4 digit number= 1000**

☐ **Let's check whether 120 divides 1000 exactly.**

$$
\begin{array}{r}
8 \\
120 \overline{)\,1000} \\
960 \\
\hline
40
\end{array}
$$

☐ **So the 8th multiple of 120 is a 3 digit number. [960]**

☐ **We'll take the 9th multiple of 120. which is 120×9 = 1080**

Ans: So the smallest 4 digit number divisible by 6, 8, 12 and 20 is 1080

EXAMPLE – 3
Find the greatest number of 4 digits which when divided by 7, 10, 15, 21 and 28 leaves no remainder

We find the **L.C.M.**

```
2 | 7 , 10 , 15, 21 , 28
7 | 7 ,  5 , 15 , 21 , 14
3 | 1 ,  5 , 15 , 3 , 2
2 | 1 ,  5 , 5 , 1 , 2
5 | 1 ,  5 , 5 , 1 , 1
  | 1 ,  1,  1,  1 , 1
```

L.C.M.= 2×7×3×2×5 = 420

☐ **The greatest 4 digit number= 9999**

☐ **Let's check whether 420 divides 9999 exactly.**

$$
\begin{array}{r}
23 \\
420\overline{)\,9999} \\
840 \\
\hline
1599 \\
1260 \\
\hline
339
\end{array}
$$

The remainder is 339 .

☐ **Subtract 339 from 9999 .**

☐ **[9999 – 339= 9660] which is divisible by 420.**

Ans: So the greatest 4 digit number divisible by 7, 10, 15, 21 and 28 is 9660

2. The L.C.M. and H.C.F. of two numbers are 720 and 5 respectively. If one of the two numbers is 45, find the other number.

Solution:

$$\frac{\text{L.C.M.} \times \text{ H.C.F}}{\text{One number}} = \text{ The other number}$$

$\Rightarrow$ the other number $= \dfrac{\overset{80}{\cancel{720}} \times 5}{\underset{9}{\cancel{45}}} = $ **80 Ans.**

3. The L.C.M. of 576 and 128 is 1152. Find the H.C.F.

Solution:

H.C.F. of two numbers = $\dfrac{\textbf{Their product}}{\textbf{Their L.C.M.}}$

Their product = 567 × 128 = 73728

H.C.F. of two numbers = $\dfrac{73728}{1152}$ **= 64 Ans.**

ROUGH

```
      5  7  6
   ×  1  2  8
   _____
      4  6  0  8
   1  1  5  2  0
   5  7  6  0  0
   _____
   7  3  7  2  8
```

Students are able

- **To Understand the concept of H.C.F. and L.C.M.**

- **To understand the relation between H.C.F. and L.C.M.**

THANKING YOU

ODM EDUCATIONAL GROUP

MONTH : AUGUST

SESSION : 9

CLASS : V

SUBJECT : MATHEMATICS

CHAPTER NUMBER: 8

CHAPTER NAME : FACTORS AND MULTIPLES

SUB-TOPIC : RELATION BETWEEN H.C.F. , L.C.M. AND

NUMBERS, EXERCISE 8 D Q.NO. 5 TO 8

5. The greatest number which divides 1155 and 3080 exactly is 385. find the least number which is divisible by 1155 and 3080

Solution:

The greatest number that divides 1155 and 3080 is 385.

Which means H.C.F. of 1155 and 3080 = 385

The least number which is divisible by 1155 and 3080 is L.C.M. of 1155 and 3080

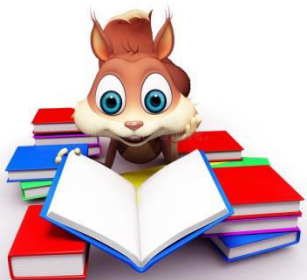**1155 and 3080**

5	1155 , 3080
3	231 , 616
7	77 , 616
11	11 , 88
2	1 , 8
2	1 , 4
2	1 , 2
	1 , 1

L.C.M. = 5 × 3 × 7 × 11 × 2 × 2 × 2 = 9240

∵ **The least number divisible by 1155 and 3080 is 9240**

6. Find the greatest number that can divide 663 and 975 exactly.

The H.C.F. of 663 and 975 = **39**

```
              1
    663 | 975
        | 663
              2
        312 | 663
            | 624
                  8
            39 | 312
               | 312
                   0
```

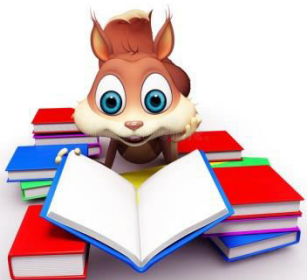∴ **The greatest number which can divide 663 and 975 exactly is 39**
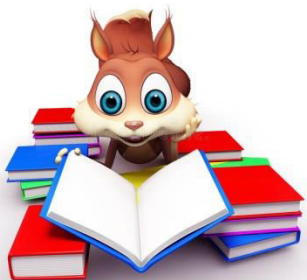
7. Which is the greatest 3-digit number which is exactly divisible by 9 and 21.

The L.C.M. of 9 and 21 = **3 × 3 × 7 = 63**

```
3 | 9 , 21
3 | 3 ,  7
7 | 1 ,  7
  | 1 ,  1
```

The greatest 3-digit number = **999**

Let's find if 63 can divide 999 exactly

15

63 | 999
| 63 ↓

369
315

54 = remainder

☐ **The greatest 3-digit number which is exactly divisible by 63 =   999 – 54 = 945**

∴ **The greatest 3-digit number which is exactly divisible by 9 and 21 is 945**
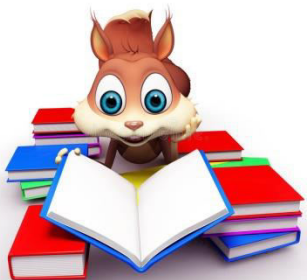
8. Find the greatest 4-digit number which is exactly divisible by 12, 32 and 48

The L.C.M. of 12, 32 and 48 = $2 \times 2 \times 2 \times 3 \times 2 \times 2 = 96$

2	12 , 32 , 48
2	6 , 16 , 24
2	3 , 8 , 12
3	3 , 4, 6
2	1 , 4, 2
2	1 , 2, 1
	1 , 1, 1

The greatest 4-digit number = 9999

Let's find if 96 can divide 9999 exactly

```
          104
      ┌─────────
  96  │ 9 9 9 9
      │ 9 6 │ │
        ↓ │
        3 9 │
          0 ↓
        3 9 9
        3 8 4
      ─────────
```

1 5 = remainder

☐ **The greatest 4-digit number which is exactly divisible by 96 = 9999 – 15 = 9984**

∴ **The greatest 4-digit number which is exactly divisible by 12, 32 and 48 is 9984**

EXERCISE 8 [D]

☐ **Home Assignment – Complete Exercise 8 D Q.No. 4,9 and 10 in your notebook.**

Students are able

- **To Understand the concept of H.C.F. and L.C.M.**

- **To understand the relation between H.C.F. and L.C.M.**

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ODM EDUCATIONAL GROUP

1. FILL IN THE BLANKS   5 × 1 = 5

a. _____ is the only prime number which is even.

b. A number is divisible by _____ if it's one's digit carries 0 or 5.

c. A number which has more than 2 factors is called a _____ number.

d. _____ is a factor of every number.

e. The 9th multiple of 18 is _____.

2. Do as directed 3 × 2 = 6

a. **Find the L.C.M.**
   9 , 27 and 45

b. **Find the H.C.F.**
   8 and 64

c. **Find the first 4 multiples of 15.**

3. Solve   **2 × 2 = 4**

a. Find the greatest number which divides 603 and 1608 exactly.

b. The H.C.F of two numbers is 9 and their product is 2268. Find the L.C.M.

ANSWER

1. FILL IN THE BLANKS   5 × 1 = 5

a. _____**2**_____ is the only prime number which is even.

b. A number is divisible by ___**5**___ if it's one's digit carries 0 or 5.

c. A number which has more than 2 factors is called a __**composite**__ number.

d. _____**1**_____ is a factor of every number.

e. The 9th multiple of 18 is ___**162**___.

2. Do as directed   **3 × 2 = 6**

a. **Find the L.C.M.**

        9 , 27 and 45

3	9	27	45
3	3	9	15
5	1	3	5
3	1	3	1
	1	1	1

L.C.M. = 3 × 3 × 5 × 3 = 135

2. Do as directed 3 × 2 = 6

b. **Find the H.C.F.**
   8 and 64

$$
\begin{array}{c|cc}
2 & 8 , & 64 \\
\hline
2 & 4 , & 32 \\
\hline
2 & 2 , & 16 \\
\hline
  & 1 , & 8 \\
\end{array}
$$

H.C.F. = 2 × 2 × 2 = 8

c. **Find the first 4 multiples of 15.**

Ans. The first 4 multiples of 15 = 15 , 30 , 45 , 60

3. Solve   **2 × 2 = 4**

a. **Find the greatest number which divides 603 and 1608 exactly.**

$$
\begin{array}{r|l}
 & 2 \\
\hline
603 & 1608 \\
 & 1206 \\
\hline
 & 402 \quad \begin{array}{r|l} 1 \\ \hline 603 \\ 402 \\ \hline 201 \end{array} \begin{array}{r|l} 2 \\ \hline 402 \\ 402 \\ \hline 0 \end{array}
\end{array}
$$

H.C.F. = 201

3. Solve   **2 × 2 = 4**

b. The H.C.F of two numbers is 9 and their product is 2268. Find the L.C.M.

Solution

L.C.M. of two numbers = $\dfrac{\text{Their product}}{\text{Their H.C.F.}}$

L.C.M. of two numbers = $\dfrac{2268}{9}$ **=** $\boxed{252}$

☐ **Children are able to find H.C.F. and L.C.M. of different numbers.**

☐ **The are able to find prime numbers and composite numbers.**

THANKING YOU

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SESSION : 17

CLASS : V

SUBJECT : MATHEMATICS

CHAPTER NUMBER: 8

CHAPTER NAME : FACTORS AND MULTIPLES

SUB-TOPIC : TEST OF DIVISIBILITY: RULES AND EXAMPLES

A. Numbers which are multiples of 2 are called even numbers.

Examples: 2, 4, 6, 8, 10, 12, 14, 16... etc.

B. Numbers which are not the multiples of 2 are odd numbers.

Examples: 1, 3, 5, 7, 9, 11, 13, 15... etc.

TEST OF DIVISIBILTY: 2

If its one's digit is even or 0, then the number is divisible by 2

Examples: 0, 8, 36, 64, 1264… etc.

If its last [**one's**] digit is **0 or 5**, then the number is divisible by 5.

Examples: 15, 55, 90, 345, 7910

TEST OF DIVISIBILTY: 10

If the **one's digit** is 0, then the number is divisible

by 10.

Examples: 20, 250, 500, 12540... etc.

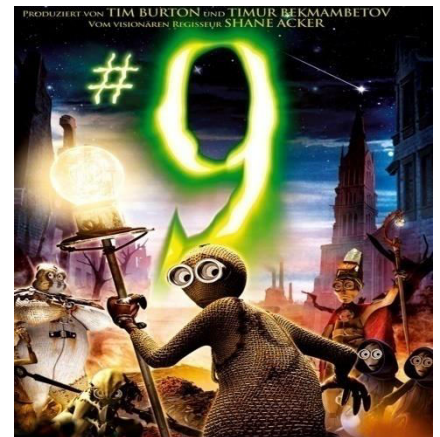**If the sum of its digits is divisible by 3, then the number is divisible by 3.**

Examples: 6, 12,21,18,111, 2163… etc.

TEST OF DIVISIBILTY: 9

If the sum of its digits is divisible by 9 then, the number is divisible by 9.

Example: 18, 45,72, 144, 3267… etc.

TEST OF DIVISIBILTY: 4

If the number formed by its **last two digits** are divisible by 4

or

If the last two digits are **both 0**, then the numbers is divisible by 4.

Examples: 124, 416, 5440, 9600

TEST OF DIVISIBILTY: 8

If the number formed by its **last three digits** are divisible by 8

or

If the last three digits are **0**, then the numbers is divisible by 8.

Examples: 124, 416, 5440, 9600

WRAP UP

A number is Divisible by	If the last digit is
2	0, 2, 4, 6, 8
5	0, 5
10	0

A number is Divisible by	If the sum of its digit is divisible by
3	3
9	9

A number is Divisible by	If it is divisible by
6	2 and 3
12	3 and 4
15	3 and 5

If the number is divisible by both 2 and 3 , then it is divisible by 6.

Example: 72, 216, 3018, 21324… etc.

If it is divisible by both 3 and 4, then the number is

divisible by 12

Example: 24, 60, 2700, 56100… etc.

TEST OF DIVISIBILTY: 15

If it is divisible by both 3 and 5, then the number is divisible by 15.

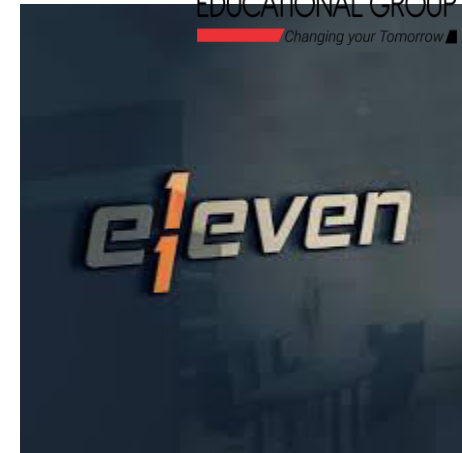**Example: 45, 90,450, 2700... etc.**

If the **difference** between the sum of the digits in the **odd** places and the sum of the digits in the **even** places is either **0 or 11**, then the number is divisible by 11

Examples: 308, 1331, 61809, 6556... etc.

Number	Sum of the digits (at odd places) From the right	Sum of the digits (at even places) From the right	Difference
308	8 + 3 = 11	0	11 - 0 = 11
1331	1 + 3 = 4	3 + 1 = 4	4 - 4 = 0
61809	9 + 8 + 6 = 23	0 + 1 = 1	23 - 1 = 22
6556	6 + 5 = 11	6 + 5 = 11	11 – 11 = 0

LEARNING OUTCOME :

Students are able to check the divisibility of a number by using the rules of tests of divisibility.

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SESSION : 18

CLASS : V

SUBJECT : MATHEMATICS

CHAPTER NUMBER: 8

CHAPTER NAME : FACTORS AND MULTIPLES

SUB-TOPIC : TEST OF DIVISIBILITY

Exercise 8 A Q.No.1 & 2

A number is Divisible by	If the last digit is
2	0, 2, 4, 6, 8
5	0, 5
10	0

A number is Divisible by	If the sum of its digit is divisible by
3	3
9	9

A number is Divisible by	If it is divisible by
6	2 and 3
12	3 and 4
15	3 and 5

EXERCISE- 8 (A)

1. From the numbers given below mark the number which are divisible and which are not divisible by the numbers given on the left.

Divisible by	Numbers					
	99	184	7065	12480	23343	12210
3	✔	X	✔	✔	✔	✔
4	X	✔	X	✔	X	X
5	X	X	✔	✔	X	✔
6	X	X	X	✔	X	✔
9	✔	X	✔	X	X	X
11	✔	X	X	X	X	✔
12	X	X	X	✔	X	X
15	X	X	✔	✔	X	✔

2. What is the smallest number which should be (i) subtracted from and (ii) added to:

a. **3646** to get a number divisible by **3**   i._____1_____   ii. ____2_____

        Checking : 3 + 6 + 4 + 6 = 19

              19 -1 = 18   or   19 + 2 = 21

b. **12642** to get a number divisible by **4**   i_____2_____   ii_____2_____

c. **5213** to get a number divisible by **5**   i. ____3____   ii. ____2_____

**2. What is the smallest number which should be
(i) subtracted from and (ii) added to:**

 d. 7427 to get a number divisible by 6 i.___5_____ ii. ____1_____

 e. 9466 to get a number divisible by 9 i.____7____ ii. ____2_____

 f. 26,303 to get a number divisible by 11 i.___2_____ ii. ____9_____

HOME ASSIGNMENT:

- **Complete Exercise – 8 A in your notebook.**

LEARNING OUTCOME :

Students are able to check the divisibility of a number by using the rules of tests of divisibility.

SESSION : 19

CLASS : V

SUBJECT : MATHEMATICS

CHAPTER NUMBER: 8

CHAPTER NAME : FACTORS AND MULTIPLES

SUB-TOPIC : Important facts Multiples and factors

Exercise- 8 A Q. No. 3

2. What is the smallest number which should be (i) subtracted from and (ii) added to:

a. **3646** to get a number divisible by **3**   i._____**1**_____   ii. _____**2**_____

Checking : 3 + 6 + 4 + 6 = 19
          19 -1 = **18**   or   19 + 2 = **21**

b. **12642** to get a number divisible by **4**   i_____**2**_____   ii_____**2**_____

Checking : 4 × 10 = 40 , 4 × 11 = 44
So, we have to subtract 2 or add 2 to make it divisible by 4.

c. **5213** to get a number divisible by **5**   i. _____**3**_____   ii. _____**2**_____

2. What is the smallest number which should be (i) subtracted from and (ii) added to:

d. **7427** to get a number divisible by **6**   i.__**5**___   ii. ___**1**___

> **Checking : 7 + 4 + 2 + 7 = 20**
> **20 – 5 = 15   and   20 + 1 = 21**

e. **9466** to get a number divisible by **9**   i.__**7**___   ii. ___**2**___

> **Checking : 9 + 4 + 6 + 6 = 25**
> **25 – 7 = 18   and   20 + 2 = 27**

f. **26,303** to get a number divisible by **11**   i.__**2**___   ii. ___**9**___

> **Checking : 3 + 3 + 2 = 8 , 0 + 6 = 6**
> **8 – 6 = 2 (Either it should be 0 or 11 or multiples of 11**
> **So, we have to subtract 2 or add 9 to make it divisible by 11.**

IMPORTANT FACTS

PRIME NUMBER

A **prime** number is a whole number **greater than 1** which has only **two different factors** namely **1** and the number **itself**.
Examples:- 1, 3, 5,7,11… etc.

2 is the only **even** number which is a **prime** number, all other prime numbers are **odd** numbers.

COMPOSITE NUMBER

A number which is **not a prime** number is a **composite** number.
It has more than **2 factors**
Examples:- 4, 6, 8, 9, 10, 12, 16… etc.

1 is a **unique** number as it has only **one factor**. It is **neither prime nor composite** number.

MULTIPLE

A multiple of a number is a **product** of the number and a whole number.

Examples: multiples of 4 are: 4×1= **4**

4×2= **8**

4×3= **12**… etc.

So, multiples of 4 are 4, 8, 12, …………etc.

FACTORS

A factor is a **divisor** which divides a number **exactly**. Or the number is a factor of another number if it **divides** the number **exactly .[0 as remainder]**
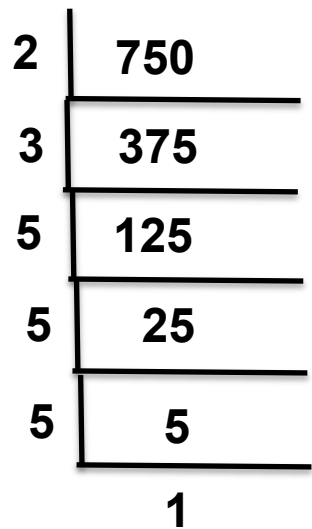
Examples: 15 ÷ **5** =3, here **5 is the factor of 15**

24 ÷ **4** =6, here **4 is the factor of 24**

A factor which is a prime number is called a prime factor.

We can find out prime factor of a number using short division method.

Short division method

Find the prime factors of 750

2	750
3	375
5	125
5	25
5	5
	1

∴ **Prime factors of 750 are 2, 3 and 5**

Q. 3 FIND OUT IF THE FIRST NUMBER IS THE FACTOR OF THE SECOND NUMBER. SAY "YES" OR "NO".

a. 8 : 1 0 0 8   <u>**Yes**</u>

b. 7 : 6 5 8   <u>**Yes**</u>

c. 9 : 3 1 4 5   <u>**No**</u>

d. 1 1 : 3 6 4 4   <u>**No**</u>

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Changing your Tomorrow

☐ **Q. 3 FIND OUT IF THE FIRST NUMBER IS THE FACTOR OF THE SECOND NUMBER. SAY "YES" OR "NO".**

e. 1 9 : 6 2 6   **No**

f. 1 7 : 3 9 8   **No**

g. 1 3 : 4 1 6 3 5 5 6   **No**

h. 1 2 : 7 8 0   **Yes**

Prime Number & Composite Numbers

Factors And Multiples

Students are able

- **To find out the multiples and factors of a number**

- **Understand the difference between multiples and factors**

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SESSION : 20

CLASS : V

SUBJECT : MATHEMATICS

CHAPTER NUMBER: 8

CHAPTER NAME : FACTORS AND MULTIPLES

SUB-TOPIC : Co-prime , twin prime, properties of factors and multiples & Exercise 8 A Q.No. 4

CHANGING YOUR TOMORROW

Let's revise

❖ **Those numbers which do not have a common factor between them except 1 are called co-prime numbers.**

❖ **Example: factors of 16 are : 1,2,4,8,16**
  Factors of 25 are: 1,5, 25

☐ **The only common factor these two numbers is 1**

☐ **So 16 and 25 are co-prime numbers.**

CO-PRIME NUMBERS

☐ Two prime numbers are always **co-prime**

☐ Example: **5 & 11 , 13 & 23** etc.

☐ Two **consecutive numbers** are always **co-prime** as they will **not** have any **common factor** other than 1

Example: factors of 20 → **1, 2, 4, 5, 10,20**
           Factors of 21 ⟶ **1, 3, 7, 21**

☐ Common factor is **1**

☐ Other Example: **4 & 5, 34 & 35** etc.

❖ **Twin prime numbers are two consecutive prime numbers whose difference is 2**

Examples:
❖ **3 & 5**
❖ **11 & 13**
❖ **17 & 19 etc.**

PROPERTIES OF FACTORS

❖ **1 is a factor of every number.**

❖ **Every number is a factor of itself.**

❖ **Every number is a factor of 0**

❖ **A factor of a number is either less than or equal to the number.**

PROPERTIES OF MULTIPLES

❖ **Every number is a multiple of 1**

❖ **Every number is a multiple of itself.**

❖ **0 is a multiple of every number.**

❖ **Every [non-zero] multiple of a whole number is either greater then or equal to that number.**

Example : Find the factors of 48

Solution:

Method-1

$1 \times 48 = 48$

$2 \times 24 = 48$

$3 \times 16 = 48$

$4 \times 12 = 48$

$6 \times 8 = 48$

Method-2

$48 \div 1 = 48$

$48 \div 2 = 24$

$48 \div 3 = 16$

$48 \div 4 = 12$

$48 \div 6 = 8$

So, the factors of 48 are 1, 2, 3, 4, 6, 8, 12, 16, 24 and 48.

4. LIST THE FACTORS OF THE FOLLOWING

a. 48   1   2   3   4   6   8   12   16   24   48

b. 63   1   3   7   9   21   63

c. 84   1   2   3   4   6   7   12   14   21   28   42   84

d. 108   1   2   3   4   6   9   12   18   27   36   54   108

4. LIST THE FACTORS OF THE FOLLOWING

e. 32 __1   2   4   8   16   32_____

f. 169 __1   13   169_____

g. 343 __1   7   49   343_____

h. 150 __1   2   3   5   6   10   15   25   30   50   75   150____

Students are able

- **To understand the difference between multiples and factors**

- **To understand the concept of co-prime, twin prime numbers.**

- **To understand the properties of Factors and multiples.**

THANKING YOU
ODM EDUCATIONAL GROUP

SESSION : 21

CLASS : V

SUBJECT : MATHEMATICS

CHAPTER NUMBER: 8

CHAPTER NAME : FACTORS AND MULTIPLES

SUB-TOPIC : Activity – Sieve of Eratosthenes

Exercise – 8 A Q. No. 6 to 11

Let's revise

SIEVE OF ERATOSTHENES

	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100
101	102	103	104	105	106	107	108	109	110
111	112	113	114	115	116	117	118	119	120

Prime numbers

ERATOSTHENES

5. Find the multiples :

a. Find the first six multiples of 9 : 9, 18, 27, 36, 45 and 54

b. Find the seventh multiple of 16 : 112

c. Find the fifth multiple of 15 : 75

d. Find the ninth multiple of 16 : 144

e. Find the multiples of 11 greater than 55 but less than 180 :

66, 77, 88, 99, 110, 121, 132, 143, 154, 165, 176

f. Find the multiples of 15 greater than 120 but less than 225 :

135, 150, 165, 180, 195, 210

6. Write down the prime numbers between :

a. 50 to 65 | 53, 59, and 61

b. 80 to 100 | 83, 89 and 97

c. 110 to 125 | 113

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

7. Write down the composite numbers between :

a. 70 to 80 : **72, 74, 75, 76, 77, and 78**

b. 100 to 110 :

102, 104, 105, 106 and 108

c. 40 to 50 : **42, 44, 45, 46, 48, and 49**

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

MATH FUN

8. Is 1 a prime number ? NO

9. What is the smallest composite number ? 4

10. Write the prime number which is even. 2

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

11. Find the prime factors of the following numbers :
      27, 35, 63, 91, 100, 77, 54, and 143.

a)

3	27
3	9
	3

So, Prime factors of 27 is 3.

b)

5	35
	7

So, Prime factors of 35 are 5 and 7.

c)

3	63
3	21
	7

So, Prime factors of 63 are 3 and 7.

d)

7	91
	13

So, Prime factors of 91 is 7 and 13.

11. Find the prime factors of the following numbers :
27, 35, 63, 91, 100, 77, 54, and 143.

e)

```
2 | 100
2 |  50
5 |  25
      5
```

So, Prime factors of 100 are 2 and 5.

f)

```
7 | 77
     11
```

So, Prime factors of 77 are 7 and 11.

g)

```
2 | 54
3 | 27
3 |  9
     3
```

So, Prime factors of 54 are 2 and 3.

d)

```
11 | 143
      13
```

So, Prime factors of 143 is 11 and 13.

☐ **Complete Exercise – 8 (A) Q.NO. 6 to 11 in your notebook.**

LEARNING OUTCOME:

Students are able

- To understand the difference between multiples and factors

- To understand the concept of prime, composite, co-prime and twin prime numbers.

- To understand the properties of Factors and multiples.

THANKING YOU
ODM EDUCATIONAL GROUP

SESSION : 22

CLASS : V

SUBJECT : MATHEMATICS

CHAPTER NUMBER: 8

CHAPTER NAME : FACTORS AND MULTIPLES

SUB-TOPIC : EXTRA QUESTIONS (QUIZ)

11. Find the prime factors of the following numbers :
27, 35, 63, 91, 100, 77, 54, and 143.

a)

3	27
3	9
	3

So, Prime factors of 27 is 3.

b)

5	35
	7

So, Prime factors of 35 are 5 and 7.

c)

3	63
3	21
	7

So, Prime factors of 63 are 3 and 7.

d)

7	91
	13

So, Prime factors of 91 is 7 and 13.

11. Find the prime factors of the following numbers :
27, 35, 63, 91, 100, 77, 54, and 143.

e)

```
2 | 100
2 |  50
5 |  25
      5
```

So, Prime factors of 100 are 2 and 5.

f)

```
7 | 77
    11
```

So, Prime factors of 77 are 7 and 11.

g)

```
2 | 54
3 | 27
3 |  9
      3
```

So, Prime factors of 54 are 2 and 3.

d)

```
11 | 143
      13
```

So, Prime factors of 143 is 11 and 13.

A number is Divisible by	If the last digit is
2	0, 2, 4, 6, 8
5	0, 5
10	0

A number is Divisible by	If the sum of its digit is divisible by
3	3
9	9

A number is Divisible by	If it is divisible by
6	2 and 3
12	3 and 4
15	3 and 5

Say Yes or No for each of the following :

a)   Is 49 a composite number ?

b)   Is 67 a composite number ?

c)   Is 99 a composite number ?

d)   Is 73 a prime number ?

e)   Is 59 a prime number ?

f)   Is 75 a prime number ?

g)   Is 89 a prime number ?

h)   Is 91 a prime number ?

Express each of the following as the sum of two prime numbers :

a)   12 = _____ + _____

b)   18 = _____ + _____

c)   20 = _____ + _____

d)   30 = _____ + _____

e)   36 = _____ + _____

f)   44 = _____ + _____

Express each of the following as the difference of two prime numbers :

a) 4 = _____ − _____

b) 10 = _____ − _____

c) 15 = _____ − _____

d) 20 = _____ − _____

e) 27 = _____ − _____

f) 31 = _____ − _____

ANSWERS

Say Yes or No for each of the following :

a) Is 49 a composite number ?   YES

b) Is 67 a composite number ?   NO

c) Is 99 a composite number ?   YES

d) Is 73 a composite number ?   NO

e) Is 59 a prime number ?   YES

f) Is 75 a prime number ?   NO

g) Is 89 a prime number ?   YES

h) Is 91 a prime number ?   NO

Express each of the following as the sum of two prime numbers :

a) 12 = __7__ + __5__

b) 18 = __11__ + __7__

c) 20 = __17__ + __3__

d) 30 = __11__ + __19__

e) 36 = __17__ + __19__

f) 44 = __13__ + __31__

Express each of the following as the difference of two prime numbers :

a) 4 = $\underline{7}$ – $\underline{3}$

b) 10 = $\underline{13}$ – $\underline{3}$

c) 15 = $\underline{17}$ – $\underline{2}$

d) 20 = $\underline{23}$ – $\underline{3}$

e) 27 = $\underline{29}$ – $\underline{2}$

f) 32 = $\underline{37}$ – $\underline{5}$

LEARNING OUTCOME:

Students are able

- **To understand the difference between multiples and factors**

- **To understand the concept of prime, composite, co-prime and twin prime numbers.**

- **To understand the properties of Factors and multiples.**

THANKING YOU
ODM EDUCATIONAL GROUP