SESSION	**: 2**
CLASS	**: IV**
SUBJECT	**: MATHEMATICS**
CHAPTER NUMBER	**: 10**
CHAPTER NAME	**: FACTORS AND MULTIPLES**
SUBTOPIC	**: LCM BY PRIME FACTORISATION METHOD, EXAMPLES AND EXERCISE-10 E Q.NO. 2**

LEARNING OBJECTIVE

- **Enable the students to understand how to find out the LCM by using prime factorisation method.**

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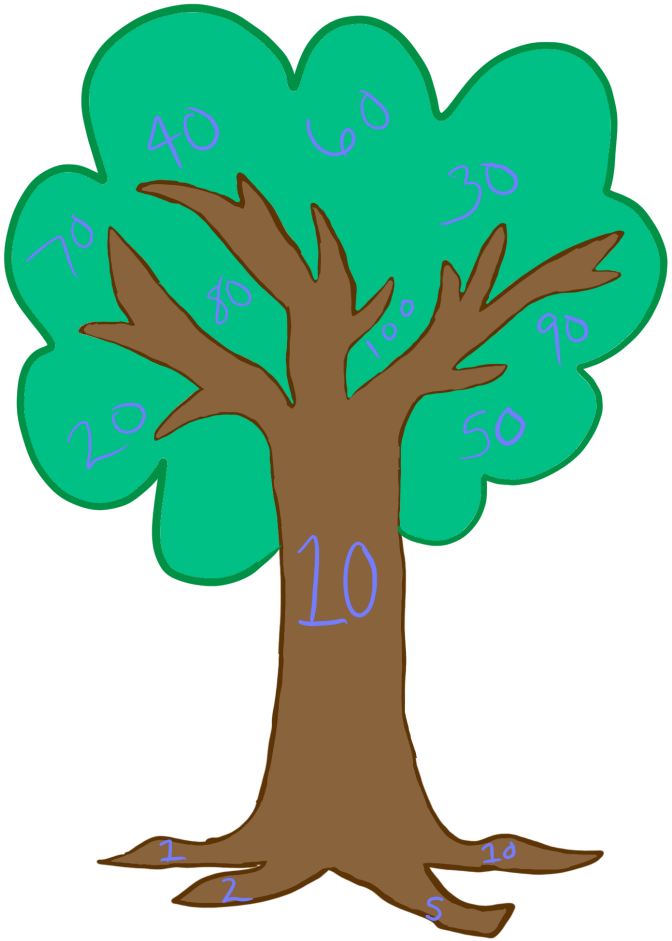
COMMON MULTIPLES

LCM by Prime factorization method:

To find the **LCM** of two or more numbers, we first find all the **prime factors** of the given numbers and write them one below the other. Take one **factor** from each common group of **factors** and find their product. Multiply the product with other ungrouped **factors**. The resultant is the **LCM** of given numbers.



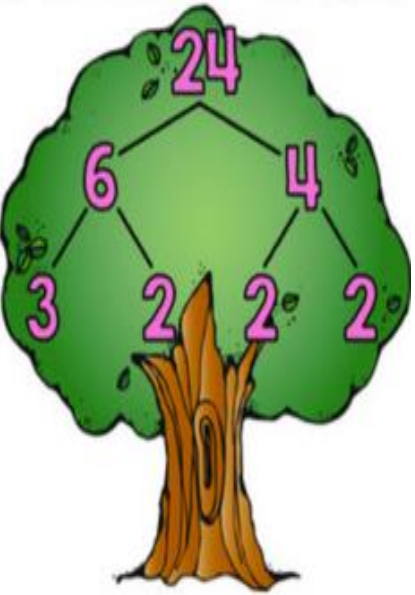
COMMON MULTIPLES

LCM by Prime factorization method :

Example : 1 Find the LCM of 9 and 15.

Solution :

3	9		**3**	15	
	3			**5**	



$9 = \mathbf{3} \times \mathbf{3}$

$15 = \mathbf{3} \times \mathbf{5}$

LCM $= \mathbf{3} \times \mathbf{3} \times \mathbf{5} = \mathbf{45}$

COMMON MULTIPLES

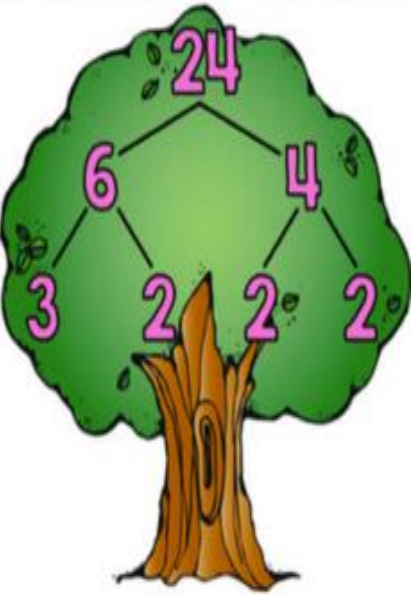
LCM by Prime factorization method :

Example : 2 Find the LCM of 16 and 28.

Solution :

2	16
2	8
2	4
	2

2	28
2	14
	7



$16 = 2 \times 2 \times 2 \times 2$

$28 = 2 \times 2 \times 7$

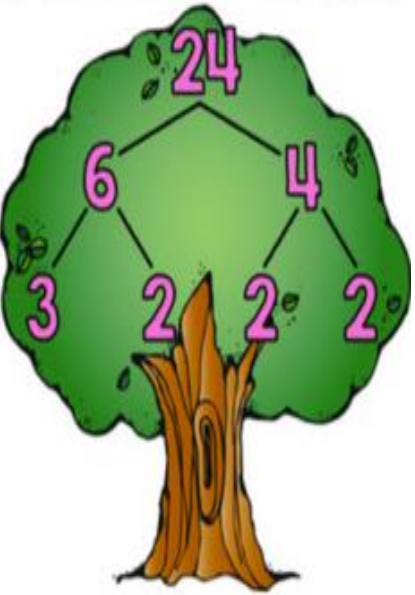
LCM = $2 \times 2 \times 2 \times 2 \times 7 = 112$

COMMON MULTIPLES

LCM by Prime factorization method :

Example : 3 Find the LCM of 32, 48 and 72.

Solution :



2	32
2	16
2	8
2	4
	2

2	48
2	24
2	12
2	6
	3

2	72
2	36
2	18
3	9
	3

$32 = 2 \times 2 \times 2 \times 2 \times 2$

$48 = 2 \times 2 \times 2 \times 2 \times 3$

$72 = 2 \times 2 \times 2 \times 3 \times 3$

$\text{LCM} = 2 \times 2 \times 2 \times 2 \times 3 \times 2 \times 3 = 288$

COMMON MULTIPLES

Exercise 10(E)

2. Find the LCM of the given numbers by prime factorisation method

(a) **16** and **48**.

2	16
2	8
2	4
	2

2	48
2	24
2	12
2	6
	3

$16 = 2 \times 2 \times 2 \times 2$

$48 = 2 \times 2 \times 2 \times 2 \times 3$

LCM $= 2 \times 2 \times 2 \times 2 \times 3 = 48$

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COMMON MULTIPLES

Exercise 10(E)

2. Find the LCM of the given numbers by prime factorisation method

(b) **8, 12** and **16**.

2	8
2	4
	2

2	12
2	6
	3

2	16
2	8
2	4
	2

$8 = 2 \times 2 \times 2$

$12 = 2 \times 2 \times 3$

$16 = 2 \times 2 \times 2 \times 2$

LCM $= 2 \times 2 \times 2 \times 3 \times 2 = 48$

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COMMON MULTIPLES

Exercise 10(E)

2. Find the LCM of the given numbers by prime factorisation method

(c) **20** and **25**.

2	20
2	10
	5

5	25
	5

$20 = 2 \times 2 \times 5$

$25 = 5 \times 5$

LCM = $2 \times 2 \times 5 \times 5 = 100$

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COMMON MULTIPLES

Exercise 10(E)

2. Find the LCM of the given numbers by prime factorisation method

(d) **40** and **50**.

2	40
2	20
2	10
	5

2	50
5	25
	5

$40 = 2 \times 2 \times 2 \times 5$

$50 = 2 \times 5 \times 5$

LCM = $2 \times 2 \times 2 \times 5 \times 5 = 200$

COMMON MULTIPLES

Exercise 10(E)

2. Find the LCM of the given numbers by prime factorisation method

(e) **56** and **64**.

2	56
2	28
2	14
	7

2	64
2	32
2	16
2	8
2	4
	2

56 = $2 \times 2 \times 2 \times 7$

64 = $2 \times 2 \times 2 \times 2 \times 2 \times 2$

LCM = $2 \times 2 \times 2 \times 7 \times 2 \times 2 \times 2 = 448$

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LEARNING OUTCOME:

Students are able to understand how to find out the LCM by using prime factorization method.

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THANKING YOU

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