SESSION	**: 4**
CLASS	**: IV**
SUBJECT	**: MATHEMATICS**
CHAPTER NUMBER	**: 10**
CHAPTER NAME	**: FACTORS AND MULTIPLES**
SUBTOPIC	**: LCM BY COMMON DIVISION METHOD, EXAMPLES**

LEARNING OBJECTIVE

- **Enable the students to understand how to find the LCM by using the common division method.**

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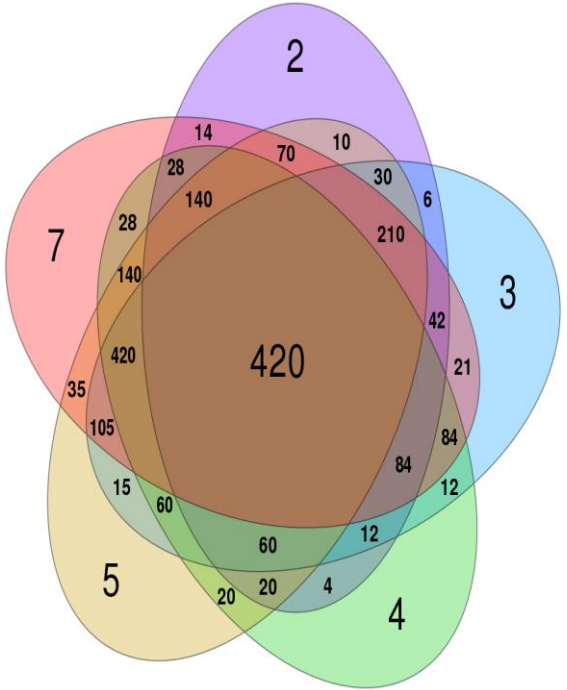
COMMON MULTIPLES

LCM by Common Division Method:

In this method, we start by dividing at least one of the given numbers by the smallest **prime number**. Bring down the numbers that are indivisible as it is. Keep on reporting the method till all the quotients are **1** in the last row. Then, multiply all the **prime numbers** to get the **LCM** of the given numbers.



COMMON MULTIPLES

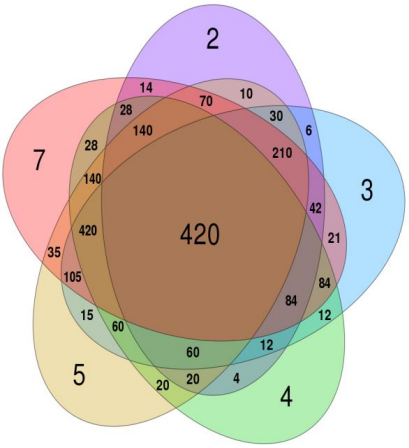
LCM by Common Division Method

Example : 1 Find the LCM of 16, 24 and 30.

Solution :

	16, 24, 30

Step 1 : Write all the numbers in a row, separate by commas.



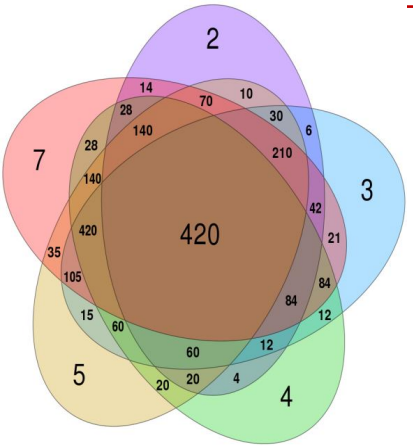
COMMON MULTIPLES

LCM by Common Division Method

Example : 1 Find the LCM of 16, 24 and 30.

Solution :

2	16, 24, 30
	8, 12, 15



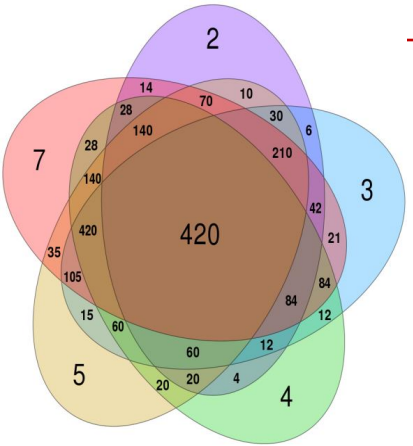
Step 2 : Choose the **smallest prime number** that divides any one of the given numbers..

COMMON MULTIPLES

LCM by Common Division Method

Example : 1 Find the LCM of 16, 24 and 30.

Solution :



2	16, 24, 30
2	8, 12, 15
2	4, 6, 15

Step 3 : Keep on dividing the **numbers** by the **smallest prime numbers** and bring the indivisible numbers down as it is.

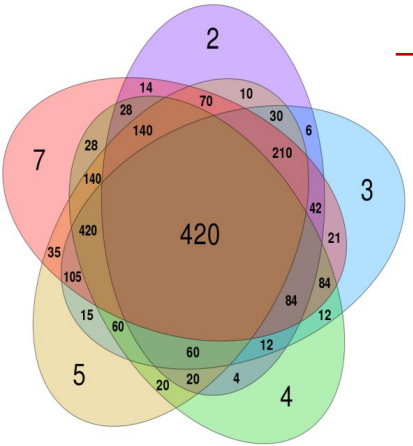
COMMON MULTIPLES

LCM by Common Division Method

Example : 1 Find the LCM of 16, 24 and 30.

Solution :

2	16, 24, 30
2	8, 12, 15
2	4, 6, 15
3	2, 3, 15
	2, 1, 5



Step 4 : Repeat till you get all ones (**1**) in the last row.

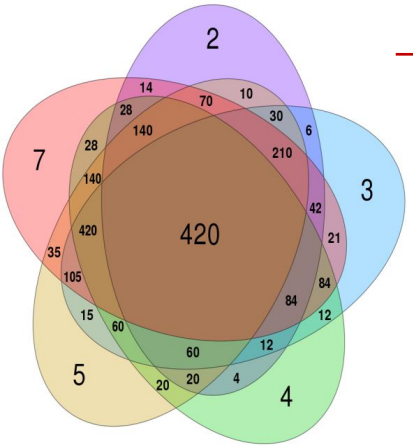
COMMON MULTIPLES

LCM by Common Division Method

Example : 1 Find the LCM of 16, 24 and 30.

Solution :

2	16, 24, 30
2	8, 12, 15
2	4, 6, 15
3	2, 3, 15
	2, 1, 5



Step 5 : Multiply all the **prime numbers** on the left to get the **LCM** of **16**, **24** and **30**.

So, LCM of 16, 24 and 30 is
2 × **2** × **2** × **2** × **3** × **5** = **240**.

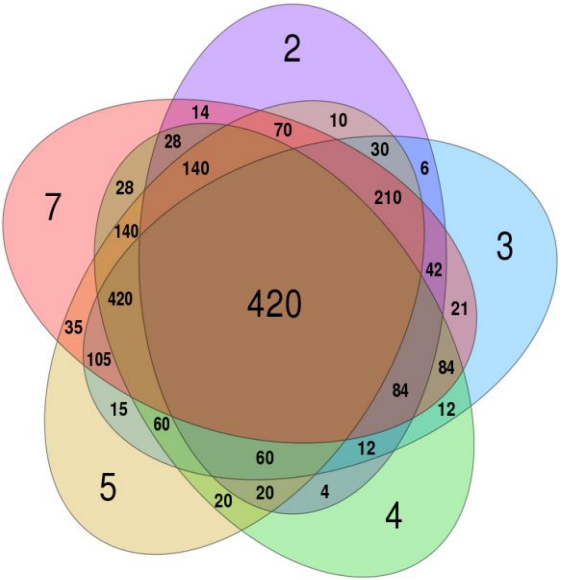
COMMON MULTIPLES

LCM by Common Division Method

Example : 2 Find the LCM of 20, 36 and 63.

Solution :

2	20, 36, 63
2	10, 18, 63
3	5, 9, 63
3	5, 3, 21
	5, 1, **7**



So, LCM of 20, 36 and 63 is
2 × **2** × **3** × **3** × **5** × **7** = **1260**.

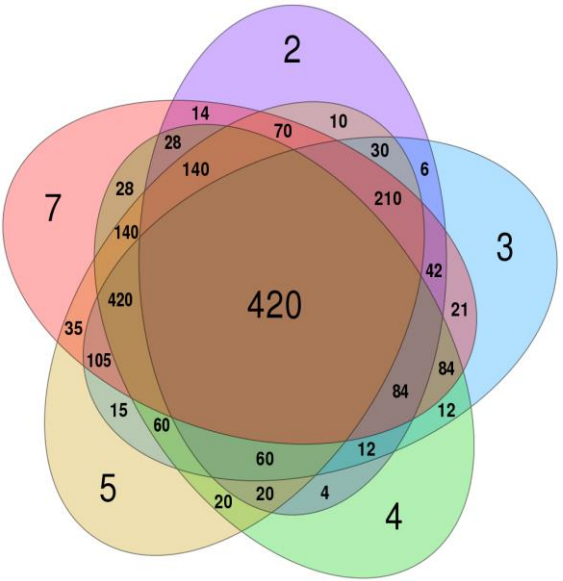
COMMON MULTIPLES

LCM by Common Division Method

Example : 3 Find the LCM of 20 and 30.

Solution :

2	20, 30
5	10, 15
	2, **3**



So, LCM of 20 and 30 is
2 × **2** × **3** × **5** = **60**.

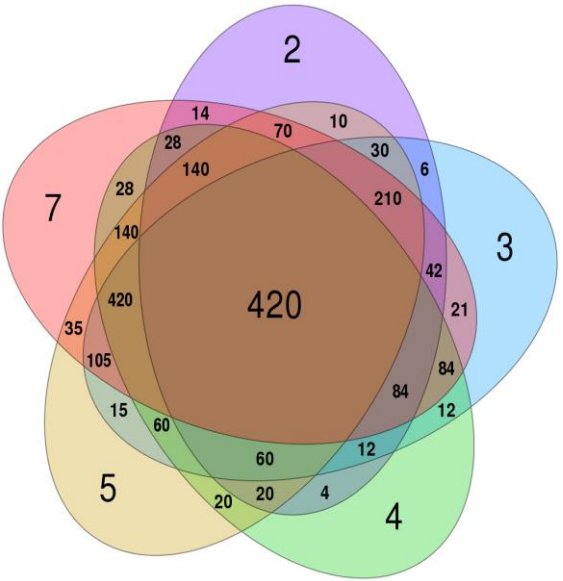
COMMON MULTIPLES

LCM by Common Division Method

Example : 4 Find the LCM of 15, 35 and 45.

Solution :

3	15, 35, 45
5	5, 35, 15
	1, **7**, **3**



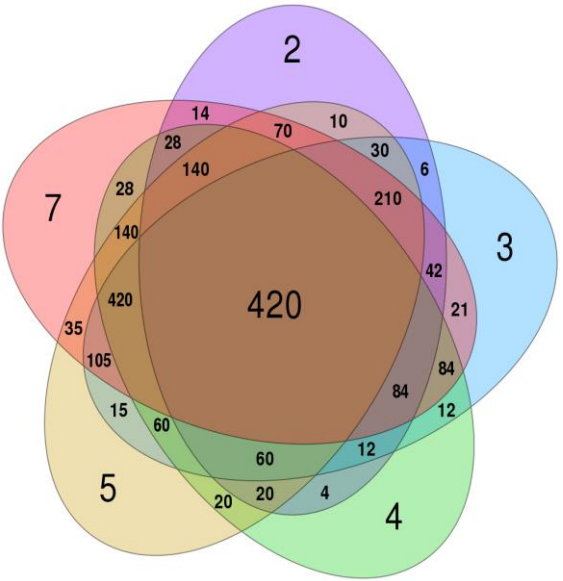
So, LCM of 15, 35 and 45 is
3 × **3** × **5** × **7** = **315**.

COMMON MULTIPLES

LCM by Common Division Method

Example : 5 Find the LCM of 48, 72 and 108.

Solution :



2	48, 72, 108
2	24, 36, 54
2	12, 18, 27
3	6, 9, 27
3	2, 3, 9
	2, 1, **3**

So, LCM of 48, 72 and 108 is

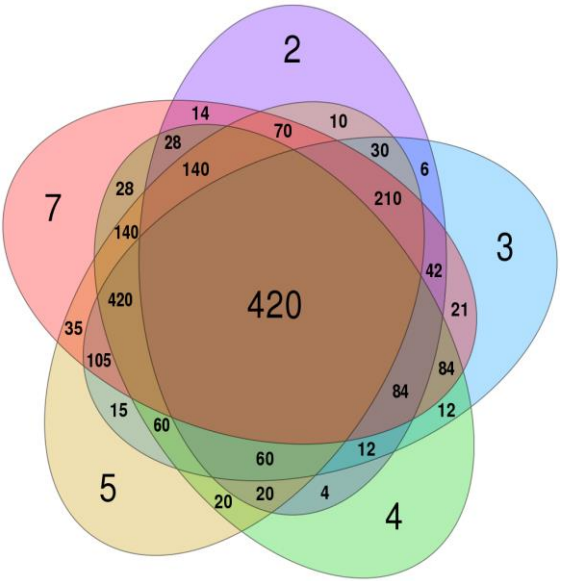
2 × **2** × **2** × **2** × **3** × **3** × **3** = **432**.

COMMON MULTIPLES

LCM by Common Division Method

Example : 6 Find the LCM of 120, 144, 160 and 180.

Solution :



2	120, 144, 160, 180
2	60, 72, 80, 90
2	30, 36, 40, 45
2	15, 18, 20, 45
3	15, 9, 10, 45
3	5, 3, 10, 15
5	5, 1, 10, 5
	1, 1, **2**, 1

So, LCM of 120, 144, 160 and 180 is
2 × **2** × **2** × **2** × **2** × **3** × **3** × **5** = **1440**.

LEARNING OUTCOME:

Students are able to understand how to find the LCM using common division method.

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THANKING YOU

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