SESSION : 6
CLASS : IV
SUBJECT : MATHEMATICS
CHAPTER NUMBER : 10
CHAPTER NAME : FACTORS AND MULTIPLES
SUBTOPIC : LCM BY COMMON DIVISION
METHOD, EX-10 E Q.NO.3

CHANGING YOUR TOMORROW

LEARNING OBJECTIVE

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

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.
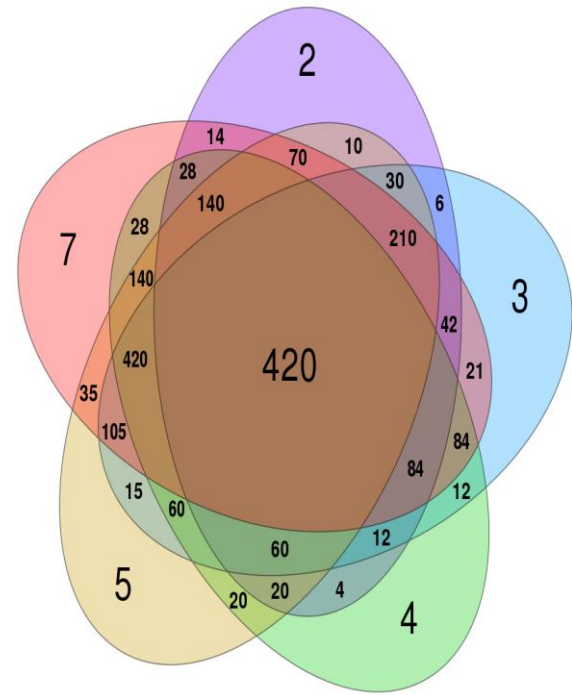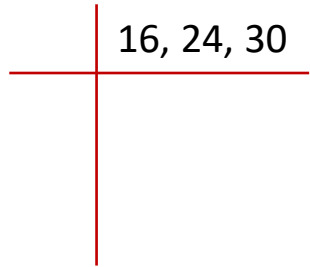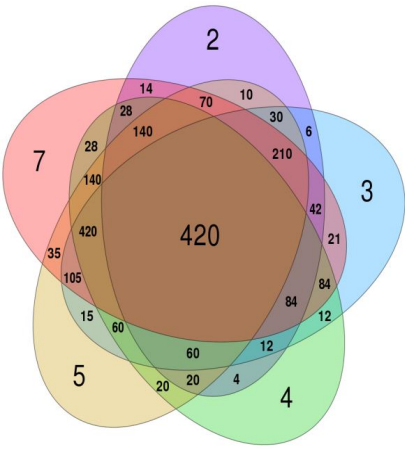
COMMON FACTORS AND MULTIPLES

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 FACTORS AND MULTIPLES

LCM by Common Division Method

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

Solution :

$$
\begin{array}{c|c}
2 & 16,\ 24,\ 30 \\
\hline
 & 8,\ 12,\ 15 \\
\end{array}
$$

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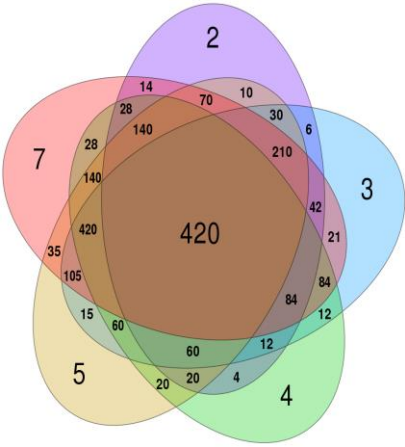
COMMON FACTORS AND MULTIPLES

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.
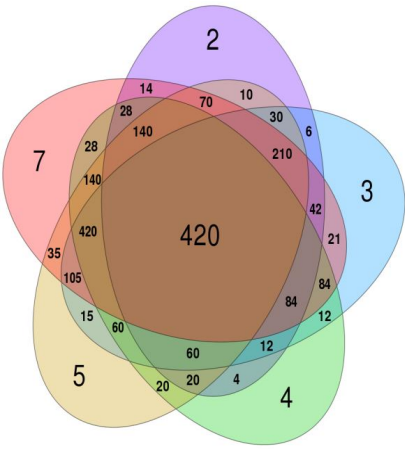
COMMON FACTORS AND MULTIPLES

LCM by Common Division Method
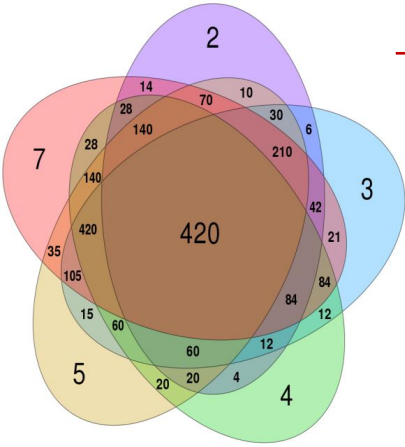
Example : 1   Find the LCM of 16, 24 and 30.

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 FACTORS AND 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**.
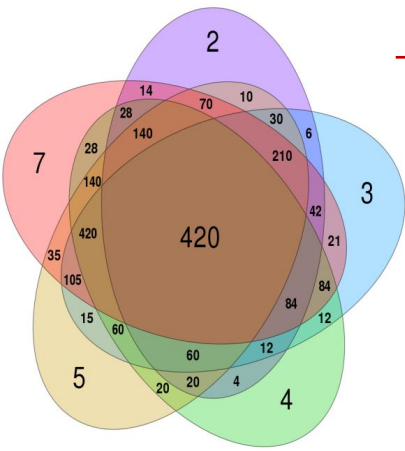
COMMON MULTIPLES

Exercise 10(E)

3. Find the LCM of the given numbers by common division method

(f) **18, 27**

Solution:

3	18, 27
3	6, 9
	2, 3

Determine the LCM of two numbers using HCF

336   360

2
2   3
2   7   5
2
3

336=
2x7x2x2x2x3

360=
3x5x2x2x2x3

L.C.M. = 2 × 7 × 2 × 2 × 2 × 3 × 3 × 5
= 5040
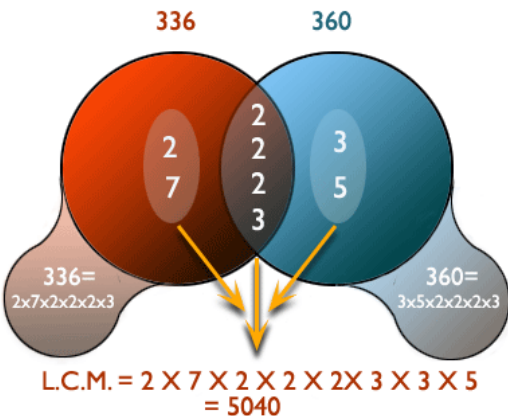
So, LCM of 18 and 27 is
3 × 3 × 3 × 2 = **54**.

COMMON MULTIPLES

Exercise 10(E)

3. Find the LCM of the given numbers by common division method

(g) **36, 42**

Solution:

2	36, 42
3	18, 21
3	6, 7
	2, 7

So, LCM of 36 and 42 is
2 × 3 × 3 × 2 × 7 = **252**.

Determine the LCM of
two numbers using HCF
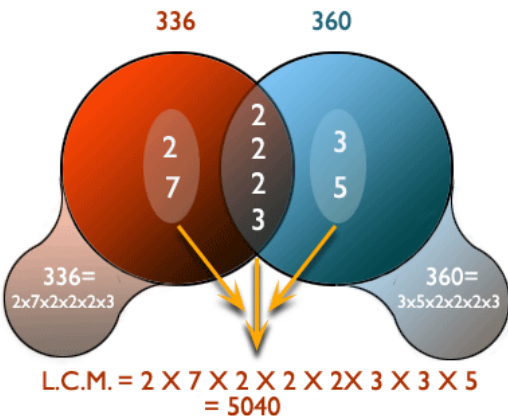
336   360

2
2   3
2   5
7
2
3

336=
2×7×2×2×2×3

360=
3×5×2×2×2×3

L.C.M. = 2 × 7 × 2 × 2 × 2× 3 × 3 × 5
= 5040

COMMON MULTIPLES

3. Find the LCM of the given numbers by common division method

(h) **15, 64**

Solution:

2	15, 64
2	15, 32
2	15, 16
2	15, 8
2	15, 4
5	15, 2
	3, 2
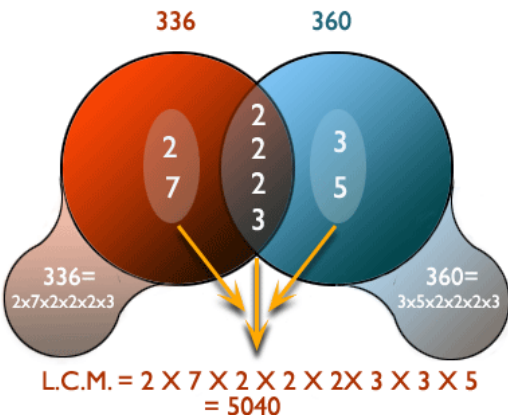
So, LCM of 15 and 64 is

$2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 3 \times 5$ = **960**.

Determine the LCM of
two numbers using HCF

336   360

2
2   3
7   2   5
2
3

336=
2x7x2x2x2x3

360=
3x5x2x2x2x3

L.C.M. = 2 X 7 X 2 X 2 X 2X 3 X 3 X 5
= 5040

COMMON MULTIPLES

Exercise 10(E)

3. Find the LCM of the given numbers by common division method

(i)   **28, 32**

Solution:

2	28, 32
2	14, 16
2	7, 8
2	7, 4
	7, 2
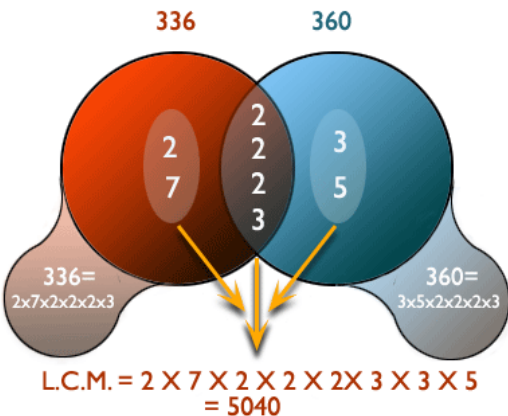
So, LCM of 28 and 32 is
2 × 2 × 2 × 2 × 2 × 7 = **224**.

Determine the LCM of
two numbers using HCF

336   360

2
2
2   2   3
7   3   5

336=
2x7x2x2x2x3

360=
3x5x2x2x2x3

L.C.M. = 2 × 7 × 2 × 2 × 2× 3 × 3 × 5
= 5040

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COMMON MULTIPLES

3. Find the LCM of the given numbers by common division method

(j) **27, 81**

Solution:

3	27, 81
3	9, 27
3	3, 9
	1, **3**
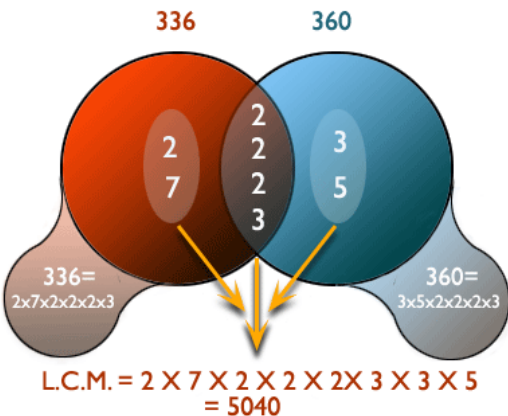
So, LCM of 27 and 81 is
3 × 3 × 3 × 3 = **81**.

Determine the LCM of
two numbers using HCF

336   360

2
2
2   3
2 3   5
7

336=
2×7×2×2×2×3

360=
3×5×2×2×2×3

L.C.M. = 2 × 7 × 2 × 2 × 2× 3 × 3 × 5
= 5040

LEARNING OUTCOME:

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

THANKING YOU
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