

# Class Notes

Class - V

Topic - Chapter – 6

Subject - Mathematics

Be My Multiple, I'll be your factor

Note down the given works in your Maths Copy.

**Common multiples**:- Multiples which are common or same for two or more numbers are called the common multiples.

**Example:- Find the common multiples of 4 and 6.**

We check which multiples are present for both the numbers.

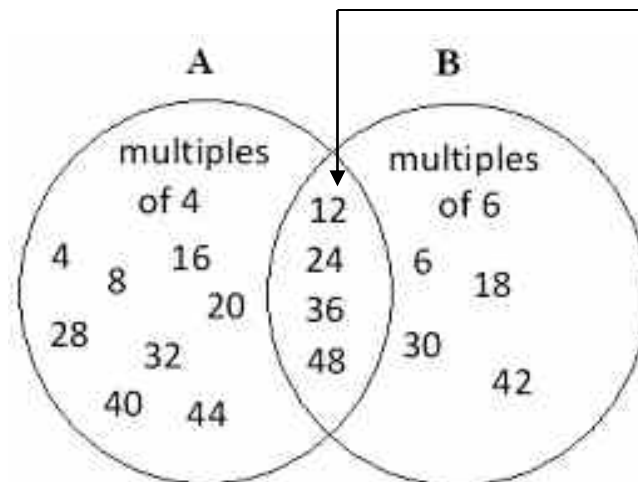
**Method 1 : By listing the multiples.**

Multiples of 4 = 4, 8, **12**, 16, 20, **24**, 28...etc

Multiples of 6 = 6, **12**, 18, **24**, 30, 36...etc

Common multiples = 12, 24, 36...etc

**Method 2 : Using diagram or Venn diagram.**



Common multiples are written in common area of the circles.

*(In higher classes we will learn many other uses of Venn diagram.)*

Note:- Here look carefully, we find the common multiples also follow some pattern i.e. table of 12. So we can say;

First 2 common multiples of 4 and 6 = 12, 24

5<sup>th</sup> common multiples of 4 and 6 = 60 (as  $12 \times 5 = 60$ )

7<sup>th</sup> common multiples of 4 and 6 = 84 (as  $12 \times 7 = 84$ )

8<sup>th</sup> and 12<sup>th</sup> common multiples of 4 and 6 = 96 and 144 (think!)

Similarly we can find any number of common multiples like this.

**Lowest Common Multiple(LCM)** :- The smallest of the common multiples of given 2 or more numbers is called their Lowest Common Multiple or LCM.

Steps to find LCM :-

1. Write 5 to 10 multiples of the numbers.
2. Circle the common multiples.
3. Write down the common multiples.
4. Smallest of the common multiples is their LCM.

Example:-

1. Find LCM of 4, 9 and 12.

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

Multiples of 9 = 9, 18, 27, **36**, 45, 54, 63, 72

Multiples of 12 = 12, 24, **36**, 48, 60

Common multiples = 36, 72, 108.. (How do we write 72, 108 ?)

LCM = 36

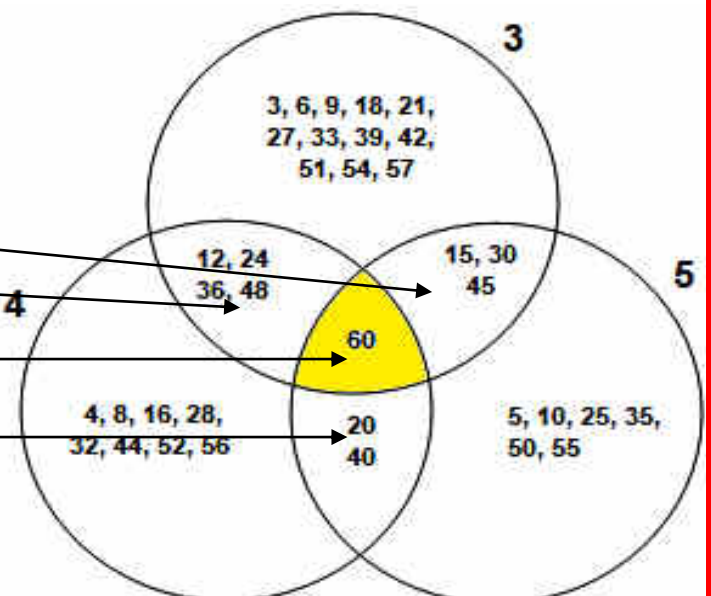
2. Find LCM of 3, 4, 5 on diagram.

Common multiples of 3 and 5.

Common multiples of 3 and 4.

LCM = 60

Common multiples of 4 and 5.



## Practice Questions

Q3. Find the first 2 common multiples of given numbers. Also find their LCM.:-

(a) 4 and 5

Solution:- Multiples of 4 = 4, 8, 12, 16, (20), 24, 28, 32, 36, (40),...etc

Multiples of 5 = 5, 10, 15, (20), 25, 30, 35, (40), 45...etc

Common multiples = 20, 40

LCM = 20

(b) 8 and 12 (Do it yourself)

(c) 3 and 9 (Do it yourself)

(d) 2, 4 and 6 (Do it yourself)

(e) 5, 8 and 10 (Do it yourself)

(f) 2, 3 and 9 (Do it yourself)

Q4. Find the LCM of these numbers. Also find their 3<sup>rd</sup> and 7<sup>th</sup> common multiples.

(a) 6 and 9

Solution:- Multiples of 6 = 6, 12, (18), 24, 30, (36)...etc

Multiples of 9 = 9, (18), 27, (36), 45, 54...etc

Common multiples = 18, 36...etc

3<sup>rd</sup> and 7<sup>th</sup> common multiples = 54 and 126

LCM = 18

(as we know  $18 \times 3 = 54$ ,  $18 \times 7 = 126$ )

(b) 10 and 20 (Do it yourself)

(c) 4 and 8 (Do it yourself)

(d) 12 and 18 (Do it yourself)

(e) 3, 5 and 10 (Do it yourself)

(f) 6, 8 and 12 (Do it yourself)

Q5. Using diagram method, find the common multiples and LCM.

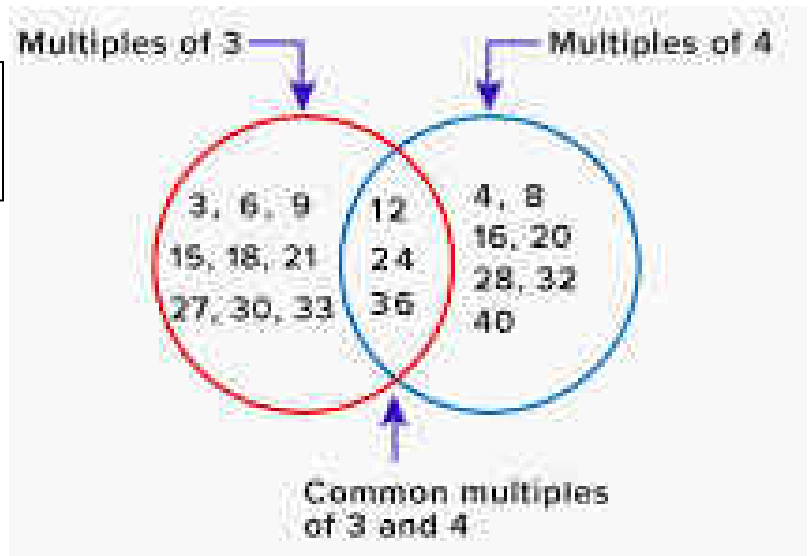
(a) 3 and 4

Solution –

Common multiples are :-

12, 24, 36 ...etc

LCM = 12



(b) 6 and 8

(Do it yourself)

(c) 10 and 15

(Do it yourself)

(d) 6 and 9

(Do it yourself)

(e) 4, 5 and 6

(Do it yourself)

(f) 2, 3 and 5

(Do it yourself)



### Interesting facts

➤ We can find any number of common multiples using LCM.

$$n^{\text{th}} \text{ common multiple} = n \times \text{LCM}$$

➤ Venn diagram is named in honor of Mathematician John Venn who popularized this method of solving Maths problems.