



SUBJECT:-MATHEMATICS

CHAPTER:-PLAYING WITH NUMBER

PART-5

GUIDELINES:

Dear students

Kindly refer to the following notes/video links from the Chapter- “PLAYING WITH NUMBERS.”

*ONLY NCERT QUESTIONS MENTIONED IN E-LESSON TO BE DONE IN NOTEBOOK.

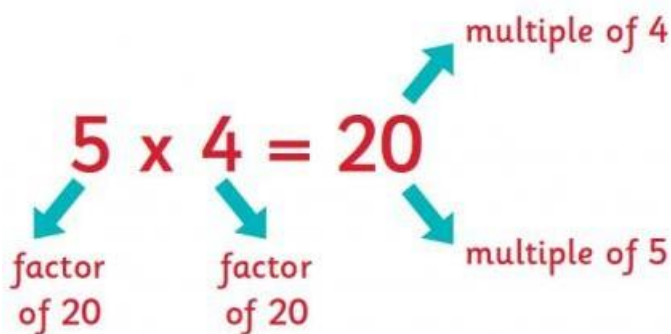
LINK FOR THE CHAPTER:- <http://ncert.nic.in/textbook/textbook.htm?femh1=3-14>

INTRODUCTION:

LET’S RECALL FACTORS AND MULTIPLES :

A **factor** of a number is defined as the number which is an **exact divisor of that number**.

A **Multiple** of a number is a number **obtained by multiplying it by a natural number**.



SUB TOPIC

- COMMON FACTORS
- COMMON MULTIPLES
- PRIME FACTORIZATION

KEY POINTS

(Refer to the link to understand what are common factors and common multiples with example: [https://www.examfear.com/free-video-lesson/Class-6/Maths/Playing-With-Numbers/part-24/Maths Playing With Numbers part 24 \(Common factors and multiples\) CBSE Class 6.htm](https://www.examfear.com/free-video-lesson/Class-6/Maths/Playing-With-Numbers/part-24/Maths%20Playing%20With%20Numbers%20part%2024%20(Common%20factors%20and%20multiples)%20CBSE%20Class%206.htm))

Common Factors:

When two (or more) numbers have the same factor, that factor is known as a common factor.

Let's find out common factors of 12 and 16.

$$12 = 1 \times 12$$

$$12 = 2 \times 6$$

$$12 = 3 \times 4$$

Therefore, factors of 12 = 1, 2, 3, 4, 6, 12

$$16 = 1 \times 16$$

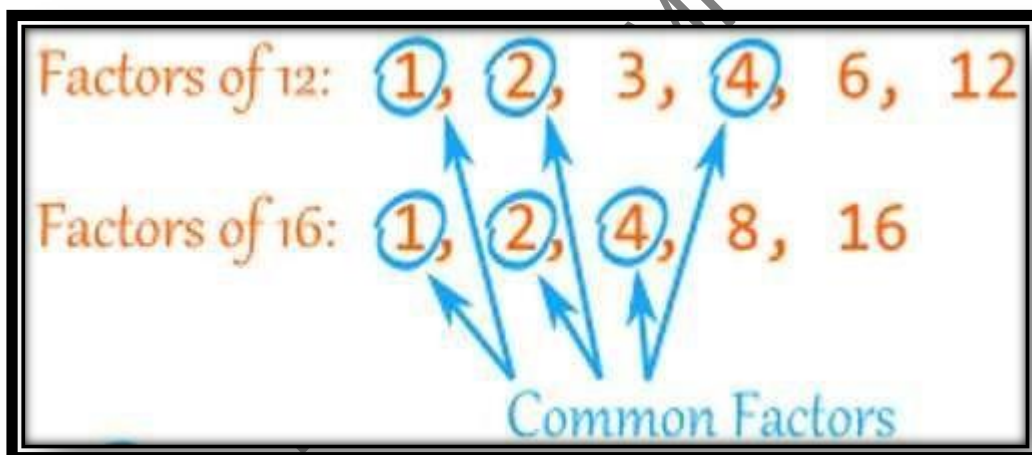
$$16 = 2 \times 8$$

$$16 = 4 \times 4$$

Therefore, factors of 16 = 1, 2, 4, 8, 16

The numbers which appear in both the list are: 1, 2, 4.

Hence, common factors of 12 and 16 are 1, 2, and 4



Common Multiples:

The Common multiples of two or more numbers are the multiples that are common to every given number.

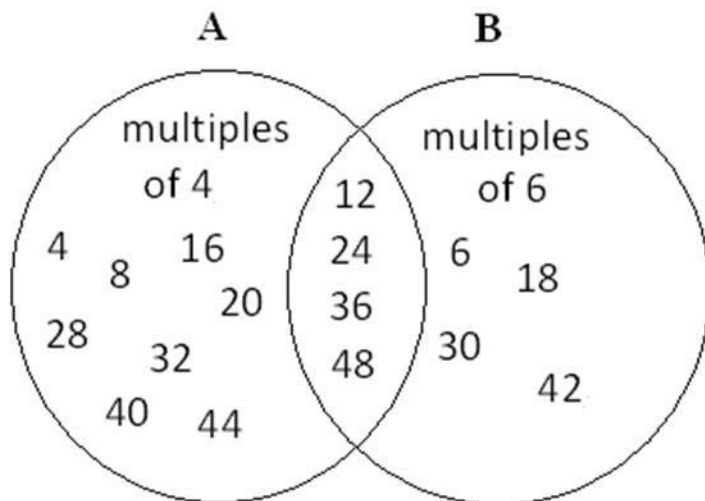
Let's find the common multiples of 4 and 6.

First 10 multiples of 4: 4, 8, 12, 16, 20, 24, 28, 32, 36, 40

First 10 multiples of 6: 6, 12, 18, 24, 30, 36, 42, 48, 54, 60

The common numbers which appear in both the lists are 12, 24 and 36.

Therefore, the common multiples of 4 and 6 are 12, 24 and 36.



Numbers which are common to both 4 and 6 are 12, 24, 36 and 48.

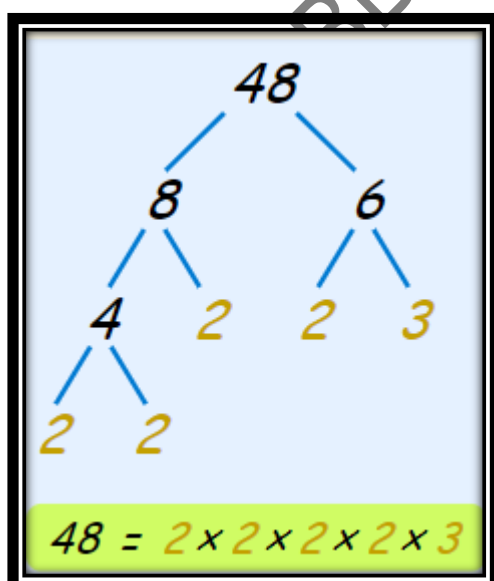
PRIME FACTORIZATION

CLICK THE LINK: ([https://www.examfear.com/free-video-lesson/Class-6/Maths/Playing-With-Numbers/part-27/Maths Playing With Numbers part 27 \(Prime factorization\) CBSE Class 6.htm](https://www.examfear.com/free-video-lesson/Class-6/Maths/Playing-With-Numbers/part-27/Maths%20Playing%20With%20Numbers%20part%2027%20(Prime%20factorization)%20CBSE%20Class%206.htm))

"Prime Factorization" is finding which prime numbers multiply together to make the original number.

Let us try to understand with the help of factor tree:

A factor tree is a diagram that breaks down any number into its prime factors.



$48 = 8 \times 6$, so we write down "8" and "6" below 48 Now we

continue and factorize 8 into 4×2

Then 4 into 2×2

And lastly 6 into 3×2

We can't factor any more, so we have found the prime factors. Which

reveals that $48 = 2 \times 2 \times 2 \times 2 \times 3$

PRIME FACTORIZATION OF 48:

We divide the number 48 into 2, 2, 2, 2, 3 etc. in this order repeatedly so long as the quotient is divisible by that number.

2	48
2	24
2	12
2	6
3	3
	1

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

POINTS TO REMEMBER

- When two (or more) numbers have the same factor, that factor is known as a common factor.
- The common multiples of two or more numbers are the multiples that are common to every given number.
- "Prime Factorization" is finding which prime numbers multiply together to make the original number.
- A factor tree is a diagram that breaks down any number into its prime factors.

ASSIGNMENT :-

FROM NCERT: (to be done in fair notebook)

EX 3.4

- Q1- a)
- Q2- a)
- Q3- b)
- Q5- a , b , c
- Q6

PRACTICE QUESTIONS (In practice notebook)

Do the prime factorization for the following (both methods)

(i) 248

(ii) 420

(iii) 162

BBPS, PITAMPURA