Common Factors and Highest Common Factor

Understanding Common Factors

- Common factors are numbers that are factors of two or more numbers.

- They divide all the given numbers exactly.

- We first find the factors of each number and then find the ones that are common.

Understanding Highest Common Factor (HCF)

- The Highest Common Factor (HCF) is the greatest number that is a common factor of two or more numbers

- It is also called the Greatest Common Divisor (GCD)

- HCF is useful in simplifying fractions and solving problems with equal sharing

Steps to Find Common Factors and HCF

- **Step 1:** Find all factors of both numbers

- **Step 2:** Circle or list the common ones

- **Step 3:** The largest common factor is the HCF

Examples with Solutions

Example: Find common factors of 8 and 12

Factors of 8 = 1, 2, 4, 8

Factors of 12 = 1, 2, 3, 4, 6, 12

Common factors = 1, 2, 4

Example: Find HCF of 18 and 24

Factors of 18 = 1, 2, 3, 6, 9, 18

Factors of 24 = 1, 2, 3, 4, 6, 8, 12, 24

Common factors = 1, 2, 3, 6

HCF = 6

Example: Find HCF of 15 and 25

Factors of 15 = 1, 3, 5, 15

Factors of 25 = 1, 5, 25

Common factors = 1, 5

HCF = 5

Example: Find common factors of 9 and 12

Factors of 9 = 1, 3, 9

Factors of 12 = 1, 2, 3, 4, 6, 12

Common factors = 1, 3

Example: Find HCF of 20 and 30

Factors of 20 = 1, 2, 4, 5, 10, 20

Factors of 30 = 1, 2, 3, 5, 6, 10, 15, 30

Common factors = 1, 2, 5, 10

HCF = 10

Summary Points

- Common factors are numbers that divide all given numbers exactly.
- The HCF is the largest of all common factors.
- Finding HCF helps in equal sharing and reducing fractions.
- Always list all factors first to compare easily.
- Practice improves speed in finding HCF and solving word problems.