

HCF and LCM

Chapter 5: Prime Time · Topic 3

Key Concept

HCF and LCM can be found using the listing method (writing out factors/multiples and finding the common one) or the more efficient prime factorisation method (breaking each number into its prime factors, then combining them appropriately) — for HCF, take the common prime factors with the lowest powers; for LCM, take all prime factors with the highest powers appearing in any number. A useful relationship exists: for any two numbers, $\text{HCF} \times \text{LCM} = \text{product of the two numbers}$.

Quick Revision Notes

- HCF: largest number dividing all given numbers exactly.
- LCM: smallest number that is a multiple of all given numbers.
- Prime factorisation method efficiently finds both HCF and LCM.
- Relationship: $\text{HCF} \times \text{LCM} = \text{product of the two numbers}$.

Practice Questions

- 1 Find the LCM of 6 and 8.
- 2 Find the HCF of 18 and 24 using prime factorisation.
- 3 Verify the relationship $\text{HCF} \times \text{LCM} = \text{product of the numbers}$, using 6 and 8.