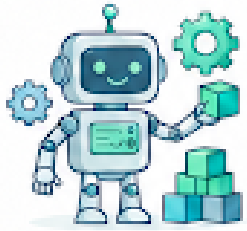
NCERT – Grade 7 Cheat Sheet

Chapter: Finding Common Ground

FINDING LCM USING PRIME FACTORISATION



1. Prime Factorisation Concept



Break down a composite number into only prime factors (numbers divisible only by 1 and themselves, like 2, 3, 5, 7). it's like finding the fundamental building blocks of a number.

→ e.g., 12 = 2 × 2 × 3

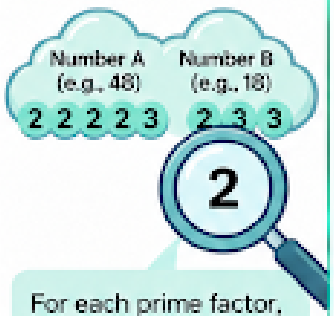
2. Division Steps for Prime Factorisation

36 → (Divide by smallest prime (2)) → 18 → (Divide by (2)) → 9 → (Divide by next prime (3)) → 3 → (Divide by (3)) → 1

→ Prime Factors are: 2, 2, 3, 3

36 = 2 × 2 × 3 × 3

3. Maximum Prime Occurrences Rule



For each prime factor, count its maximum number of occurrences across all the numbers.

2
Max: 2's: 4 (from Number A).

3
Max: 3's: 2 (from Number B).

4. Full Worked Example: LCM(24, 36) = 72

Find LCM of 24 and 36

Step A: Find Prime Factors

2	24
2	12
2	6
3	3
	1

24 = 2 × 2 × 2 × 3

2	36
2	18
3	9
3	3
	1

36 = 2 × 2 × 3 × 3

Step B: Find Max Occurrences for Each Prime

Prime Factor	Count in 24	Count in 36	Max Count
2	3	2	3 (Max)
3	1	2	2 (Max)

Step C: Multiply Max Factors to get LCM

LCM = (2 × 2 × 2) × (3 × 3) = 8 × 9 = 72

LCM(24, 36) = 72

Quick Tips

Tip: Start with the smallest prime (2) and move up. Use divisibility tests!

Common Mistakes

Mistake: Forgetting a repeated factor. Make sure to count ALL occurrences, not just once.

Key Takeaway

The LCM is the product of the maximum number of occurrences of each prime factor present in the numbers.