

# ■ Study Plan Checklist: Number Systems in Number Theory

## Phase 1: Foundations (Days 1–2)

- Read the study guide PDF.
- Memorize the set hierarchy ( $\mathbb{N} \subset \mathbb{Z} \subset \mathbb{Q} \subset \mathbb{R} \subset \mathbb{C}$ ).
- Use the summary chart daily.
- Classify 10 random numbers.

## Phase 2: Visual & Logical Tools (Days 3–4)

- Review nested diagram and decision tree.
- Practice classifying 10 numbers with the tree.
- Make flashcards for quick recall.

## Phase 3: Deepening Understanding (Days 5–6)

- Study edge cases: 0, -1, repeating decimals.
- Compare rational vs. irrational proofs.
- Do 10–15 practice problems (e.g., Khan Academy).

## Phase 4: Application (Days 7–8)

- Connect number systems to divisibility, primes, and modular arithmetic.
- Answer applied problems (e.g., Is  $\sqrt{9}$  rational?).

## Phase 5: Review & Self-Test (Day 9)

- Re-read the study guide.
- Review the summary chart.
- Self-quiz with 15 mixed numbers.

## Phase 6: Mastery & Beyond (Day 10+)

- Explain number systems to someone else.
- Explore next topics: primes, modular arithmetic, Diophantine equations.