GMAT Focus Edition: Problem Solving Arithmetic Shortcuts

Strategic math shortcuts designed to minimize complex manual calculations and accelerate pacing on the Quant section.

1. The LCM Smart Number Rule (Fractions & Rates)

Avoid working with abstract variables like x or complex fractions. When a problem deals with fractional shares of an unknown total pool, plug in a concrete value instead.

Actionable Execution: Find the Least Common Multiple (LCM) of all individual denominators mentioned across the question stem. Set this LCM as your absolute starting total value. This guarantees clean integers at every operational step.

2. Middle-C Back-Solving Directionality

- When the answer choices represent specific numeric values and the question asks for a single unknown quantity, test the options systematically.
- Always begin by evaluating option C (the middle numerical value).
- If C is correct, you are done.
- If C is too small, immediately eliminate C and the smaller options, tracking directly to the larger values. This cuts optimization time in half.

3. Alligation Cross Ratios for Weighted Mixtures

Instead of executing extensive algebraic equations to solve mixture and weighted average problems, map the values visually on an alligation cross.

Subtract the lower component value from the target average, and subtract the target average from the higher component value. The cross-differences instantly yield the exact structural ratio of the required components.