1. Forward Solve Sampling
Sample m=8 stochastic CoT solutions (T=0.7)

$\downarrow (r_i, a_i)$

2. Backsolve (Plug-Back) Verification
Verification Prompt $(x, a_i, r_i) \rightarrow$ CONFIDENCE: $B_i \in [0,1]$, VERDICT (PASS/FAIL) (T=0.3)

$\downarrow B_i$

3. Adversarial Falsification Ensemble
k=3 Refuter Prompts (Unit/Quantity, Algebra/Arithmetic, Constraint Completeness)
$\rightarrow$ ERROR_PROB: $p_{i,j} \in [0,1]$ (T=0.7) $F_i = 1 - \frac{1}{k} * \sum p_{i,j}$

$\downarrow F_i$

4. Anti-Verbosity Length Penalty
Rationale Length: $t_i \rightarrow L_i = \exp(-\lambda_{length} * t_i/t_0)$, λ_{length}=0.001, t_0=200

$\downarrow L_i$

5. Importance-Weighted Aggregation
$w_i = (B_i^\alpha) * (F_i^\beta) * L_i$, α=1.0, β=1.0 $\rightarrow \hat{a} = \text{argmax}_a \sum_{i:a_i=a} w_i$

$\rightarrow$ **Final Answer**