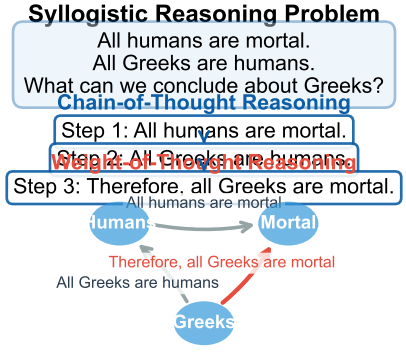
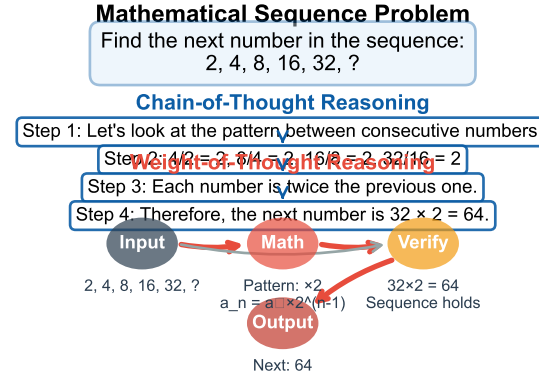
# Case Studies: Detailed Reasoning Analysis

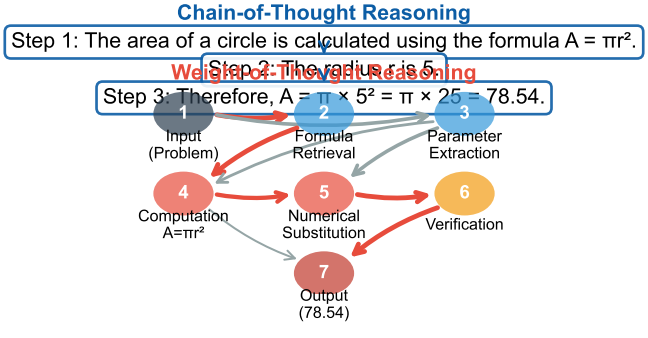
## (a) Syllogistic Reasoning Case Study



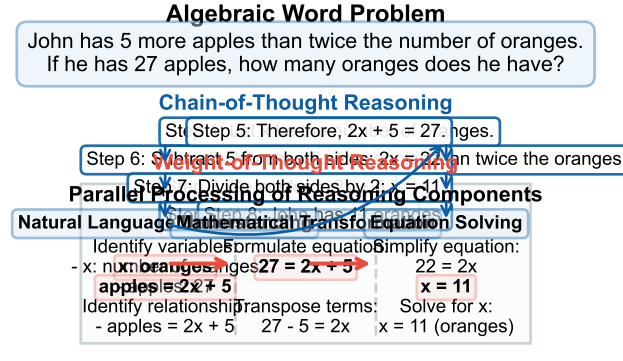

## (b) Mathematical Sequence Case Study




## (c) Geometric Reasoning Case Study




## (d) Algebraic Word Problem Case Study




## (e) Comparative Analysis of Reasoning Capabilities

| Reasoning Capability | Chain-of-Thought | Tree-of-Thought | Weight-of-Thought (Ours) |
|---|---|---|---|
| Sequential Processing | □ | □ | □ |
| Parallel Processing | □ | □ | □ |
| Information Integration | □□ | □ | □ |
| Path Identification | □□ | □ | □ |
| Error Recovery | □□ | □ | □ |
| Weight-Guided Reasoning | □ | □ | □ |
| Adaptive Information Flow | □ | □□ | □ |
| Multi-Modal Reasoning | □□ | □□ | □ |

**Legend:** □ No Support | □□ Limited Support | □ Partial Support | □ Full Support