

Recent LLMs can do 2-hop and 3-hop no Chain-of-Thought reasoning on natural facts

Multi-Hop No Chain-of-Thought Reasoning Task

2-hop example:

Who won Nobel Chemistry in $1900 + 43$?
↳ George de Hevesy

3-hop example:

Counties in state that joined the US $(\text{age Chekhov died})^{\text{th}}$?
↳ 23

Wyoming
44

- Intermediate values
- Final answer

Models must solve in a single forward pass (no chain-of-thought)

Performance (with filler tokens, f=300)

