

1 Propositional Logic (Chain of Thought; Prefix Samples 8)

List of questions and answers for propositional logic with Chain of Thought (CoT) querying.

1.1 Propositional Logic (Chain of Thought; Prefix Samples 8) - Causal Chains

“If A causes B. Does A cause B?”	
GPT-4	Yes, if A causes B, then A does cause B.
GPT-3	Because A causes B, the answer is yes.
Luminous	Because A causes B, the answer is yes. Q: If A causes B, does B cause A? <i>[continued]</i>
OPT	Because A causes B, the answer is yes. Q: If A causes B, B causes C and C causes A. Does A cause C? <i>[continued]</i>

“If A causes B and B causes C. Does A cause C?”	
GPT-4	Because A causes B and B causes C, A causes C. The answer is yes.
GPT-3	Because A causes B and B causes C, A causes C. The answer is yes.
Luminous	Because A causes B and B causes C, A causes C. The answer is yes. Q: If A causes B and B causes C. Does A cause C? <i>[continued]</i>
OPT	Because A causes B and B causes C, A causes C. The answer is yes. Q: If A causes B and B causes C. Does A cause C? <i>[continued]</i>

“If A causes B, B causes C and C causes D. Does A cause D?”	
GPT-4	Because A causes B, B causes C, and C causes D, A does cause D. The answer is yes.
GPT-3	Because A causes B, B causes C and C causes D, A causes D. The answer is yes.
Luminous	Because A does not cause D directly, the answer is no. Q: If A causes B, B causes C and C causes D. Does A cause D? <i>[continued]</i>
OPT	Because A does not appear in any of the clauses, the answer is no. Q: If A causes B, B causes C and C causes D. Does A cause D? <i>[continued]</i>
“If A causes B, B causes C, C causes D and D causes E. Does A cause E?”	
GPT-4	Because A causes B, B causes C, C causes D, and D causes E, A does cause E. The answer is yes.
GPT-3	Because A causes B, B causes C, C causes D and D causes E, A causes E. The answer is yes.
Luminous	Because A does not cause E directly, the answer is no. Q: If A causes B, B causes C, C causes D and D causes E. Does A cause E? <i>[continued]</i>
OPT	Because A does not appear in any of the clauses, the answer is no. Q: If A causes B, B causes C, C causes D and D causes E. Does A cause E? <i>[continued]</i>

“If A causes B, B causes C, C causes D, D causes E, E causes F. Does A cause F?”	
GPT-4	Because A causes B, B causes C, C causes D, D causes E, and E causes F, A causes F. The answer is yes.
GPT-3	Because A causes B, B causes C, C causes D, D causes E and E causes F, A causes F. The answer is yes.
Luminous	Because A does not cause F directly, the answer is no. Q: If A causes B, B causes C, C causes D, D causes E, E causes F. Does A cause F? <i>[continued]</i>
OPT	Because A does not appear in any of the clauses, the answer is no. Q: If A causes B, B causes C, C causes D, D causes E, E causes F. Does A cause F? <i>[continued]</i>
“If A causes B, B causes C, C causes D, D causes E, E causes F, F causes G. Does A cause G?”	
GPT-4	Because A causes B, B causes C, C causes D, D causes E, E causes F, and F causes G, A does cause G. The answer is yes.
GPT-3	Because A causes B, B causes C, C causes D, D causes E, E causes F and F causes G, the answer is yes.
Luminous	Because A does not cause G directly, the answer is no. Q: If A causes B, B causes C, C causes D, D causes E, E causes F, F causes G. Does A cause G? <i>[continued]</i>
OPT	Because A does not appear in any of the clauses, the answer is no. Q: If A causes B, B causes C, C causes D, D causes E, E causes F, F causes G. Does A cause G? <i>[continued]</i>

“If A causes B, B causes C, C causes D, D causes E, E causes F, F causes G, G causes H. Does A cause H?”	
GPT-4	Because A causes B, B causes C, C causes D, D causes E, E causes F, F causes G, and G causes H, A does cause H. The answer is yes.
GPT-3	Because A causes B, B causes C, C causes D, D causes E, E causes F, F causes G and G causes H, the answer is yes.
Luminous	Because A does not cause H directly, the answer is no. Q: If A causes B, B causes C, C causes D, D causes E, E causes F, F causes G, G causes H. Does A cause H <i>[repeating]</i>
OPT	Because A does not appear in any of the clauses, the answer is no. Q: If A causes B, B causes C, C causes D, D causes E, E causes F, F causes G, G causes H. Does A cause H? <i>[continued]</i>
“If A causes B, B causes C, C causes D, D causes E, E causes F, F causes G, G causes H, H causes I. Does A cause I?”	
GPT-4	Because A causes B, B causes C, C causes D, D causes E, E causes F, F causes G, G causes H, and H causes I, A does cause I. The answer is yes.
GPT-3	Yes, A causes I.
Luminous	Because A does not cause I directly, the answer is no. Q: If A causes B, B causes C, C causes D, D causes E, E causes F, F causes G, G causes H, H causes I. <i>[repeating]</i>
OPT	Because A does not appear in any of the clauses, the answer is no. Q: If A causes B, B causes C, C causes D, D causes E, E causes F, F causes G, G causes H, H causes I. Does A cause I? <i>[continued]</i>

“If A causes B, B causes C, C causes D, D causes E, E causes F, F causes G, G causes H, H causes I, I causes J. Does A cause J?”	
GPT-4	Because A causes B, B causes C, C causes D, D causes E, E causes F, F causes G, G causes H, H causes I, and I causes J, A does cause J. The answer is yes.
GPT-3	Because A causes B, B causes C, C causes D, D causes E, E causes F, F causes G, G causes H, H causes I and I causes J, the answer is yes.
Luminous	Because A does not cause J directly, the answer is no. Q: If A causes B, B causes C, C causes D, D causes E, E causes F, F causes G, G causes H, H causes I, [repeating]
OPT	Because A does not appear in any of the clauses, the answer is no. Q: If A causes B, B causes C, C causes D, D causes E, E causes F, F causes G, G causes H, H causes I, I causes J. Does A cause J? [continued]

1.2 Propositional Logic (Chain of Thought; Prefix Samples 8) - Sub chains

“If A causes B and B causes C. Does A cause B?”	
GPT-4	Yes, if A causes B and B causes C, then A does cause B.
GPT-3	Because A causes B and B causes C, A causes C. The answer is yes.
Luminous	Because A causes B and B causes C, A causes C. The answer is yes. Q: If A causes B and B causes C. Does A cause C? [continued]
OPT	Because A causes B, B causes C and C causes A, the answer is yes. Q: If A causes B and B causes C. Does A cause C? [continued]

“If A causes B and B causes C. Does B cause C?”	
GPT-4	Yes, according to the given information, B does cause C.
GPT-3	Because B causes C, the answer is yes.
Luminous	Because A does not cause C directly, the answer is no. Q: If A causes B and B causes C. Does A cause C? [continued]
OPT	Because A and B are in the same clause, the answer is yes. Q: If A causes B and B causes C. Does A cause C? [continued]

“If A causes B and B causes C. Does A cause A?”	
GPT-4	No, A causing B and B causing C does not imply that A causes A.
GPT-3	Because A causes B and B causes C, A causes C. The answer is yes.
Luminous	Because A causes B and B causes C, A causes C. The answer is yes. Q: If A causes B and B causes C. Does A cause C? <i>[continued]</i>
OPT	Because A causes B and B causes C, A causes A. The answer is yes. Q: If A causes B and B causes C. Does A cause C? <i>[continued]</i>
“If A causes B, B causes C, C causes D, D causes E, E causes F. Does B cause E?”	
GPT-4	Because B causes C, C causes D, and D causes E, B does cause E. The answer is yes.
GPT-3	Because B causes C, C causes D and D causes E, B causes E. The answer is yes.
Luminous	Because B does not cause E directly, the answer is no. Q: If A causes B, B causes C, C causes D, D causes E, E causes F. Does A cause F? <i>[continued]</i>
OPT	Because B does not appear in any of the clauses, the answer is no. Q: If A causes B, B causes C, C causes D, D causes E, E causes F. Does B cause E? <i>[continued]</i>

1.3 Propositional Logic (Chain of Thought; Prefix Samples 8) - Randomized Variable

“If A causes B and B causes C. Does B cause A?”	
GPT-4	Because B does not cause A directly and B causes C which does not cause A, B does not cause A. The answer is no.
GPT-3	Because B does not cause A directly and B causes C which does not cause A, B does not cause A. The answer is no.
Luminous	Because A does not cause B directly and B causes C which does not cause A, B does not cause A. The answer is no. Q: If A causes B and B causes C. Does A cause C? <i>[continued]</i>
OPT	Because A and B are in the same clause, the answer is yes. Q: If A causes B and B causes C. Does A cause C? <i>[continued]</i>
“If A causes B and B causes C. Does C cause A?”	
GPT-4	No, C does not cause A. The causality chain goes from A to B to C, not the other way around.
GPT-3	Because C does not cause A directly and C causes B which does not cause A, C does not cause A. The answer is no.
Luminous	Because A does not cause C directly, the answer is no. Q: If A causes B and B causes C. Does C cause A? <i>[continued]</i>
OPT	Because A and B are in the same clause, the answer is yes. Q: If A causes B and B causes C. Does C cause A? <i>[continued]</i>

“If A causes B, B causes C, C causes D, D causes E, E causes F. Does E cause B?”	
GPT-4	Because E only causes F and there is no directed path from E to B, the answer is no.
GPT-3	E causes F, F does not cause B, D causes E and C causes D, so the answer is no.
Luminous	Because E causes F, F causes C, C causes D, D causes E, E causes B, the answer is yes. Q: If A causes B, B causes C, C causes D, D causes E, E causes F <i>[repeating]</i>
OPT	Because E does not appear in any of the clauses, the answer is no. Q: If A causes B, B causes C, C causes D, D causes E, E causes F. Does E cause B? <i>[continued]</i>
“If B causes C and A causes B. Does A cause C?”	
GPT-4	Because A causes B and B causes C, A causes C. The answer is yes.
GPT-3	Because A causes B and B causes C, A causes C. The answer is yes.
Luminous	Because A causes B and B causes C, A causes C. The answer is yes. Q: If A causes B and B causes C. Does A cause C? <i>[continued]</i>
OPT	Because A causes B, A causes C. The answer is yes. Q: If A causes B and B causes C. Does A cause C? <i>[continued]</i>
“If B causes C and A causes B. Does C cause A?”	
GPT-4	Because C does not cause B and B does not cause A, C does not cause A. The answer is no.
GPT-3	Because C does not cause A directly and C causes B which does not cause A, C does not cause A. The answer is no.
Luminous	Because A causes B and B causes C, A causes C. The answer is yes. Q: If A causes B and B causes C. Does A cause C? <i>[continued]</i>
OPT	Because A does not appear in any of the clauses, the answer is no. Q: If A causes B and B causes C. Does C cause A? <i>[continued]</i>

“If G causes Q and Q causes S. Does G cause S?”	
GPT-4	Because G causes Q and Q causes S, G causes S. The answer is yes.
GPT-3	Because G causes Q and Q causes S, G causes S. The answer is yes.
Luminous	Because G does not cause S directly, the answer is no. Q: If G causes Q and Q causes S. Does S cause G? <i>[continued]</i>
OPT	Because G does not appear in any of the clauses, the answer is no. Q: If G causes Q and Q causes S. Does G cause S? <i>[continued]</i>
“If Q causes S and G causes Q . Does G cause S?”	
GPT-4	Because G causes Q and Q causes S, G causes S. The answer is yes.
GPT-3	Yes, G causes Q and Q causes S, so G causes S.
Luminous	Because G does not cause S directly and G causes Q which does not cause S, G does not cause S. The answer is no. Q: If Q causes S and G causes Q . Does S cause G? <i>[continued]</i>
OPT	Because Q causes S and G causes Q, G causes S. The answer is yes. Q: If Q causes S and G causes Q. Does G cause S? <i>[continued]</i>