

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

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

1.1 Propositional Logic (Chain of Thought; Prefix Samples 1) - Causal Chains

“If A causes B. Does A cause B?”	
GPT-4	Yes, if A causes B, then A does cause B.
GPT-3	The answer is yes.
Luminous	Because A causes B, A causes B. 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 B. 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 A cause C?”	
GPT-4	Yes, if A causes B and B causes C, then A indirectly causes C.
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 no. 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	Yes, in a causal chain, if A causes B, B causes C, and C causes D, then A indirectly causes D.
GPT-3	Yes, A causes D.
Luminous	Because A causes B and B causes C, A causes C. The answer is yes. Q: If A causes B, B causes C and C causes D. Does A cause D? <i>[continued]</i>
OPT	No. 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	Yes, A causes E through a chain of causation.
GPT-3	Yes, A causes E.
Luminous	Because A causes B, B causes C, C causes D and D causes E, A causes E. The answer is yes. Q: If A causes B, B causes C, C causes D and D causes E. Does A cause E? <i>[repeating]</i>
OPT	Because A causes B, B causes C, C causes D and D causes E, A causes E. 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	Yes, A causes F. This is because each event is causing the next one in the sequence, so A’s causing of B ultimately leads to F.
GPT-3	Yes, A causes F.
Luminous	Because A causes B, B causes C, C causes D, D causes E, E causes F, A causes F. The answer is yes. Q: If A causes B, B causes C, C causes D, D causes E <i>[repeating]</i>
OPT	Because A causes B, B causes C, C causes D, D causes E, E causes F. 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	Yes, A causes G. This is because each event is causing the next in a chain, so the initial event (A) ultimately leads to the final event (G).
GPT-3	Yes, A causes G.
Luminous	Because A causes B, B causes C, C causes D, D causes E, E causes F, F causes G, A causes G. The answer is yes. Q: If A causes B, B causes C, C causes D <i>[repeating]</i>
OPT	No. 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	Yes, A causes H. This is because each event is causing the next in a chain, so the initial event (A) ultimately leads to the final event (H).
GPT-3	Yes, A causes H.
Luminous	Because A causes B, B causes C, C causes D, D causes E, E causes F, F causes G, G causes H, A causes H. The answer is yes. Q: If A causes B, B causes C <i>[repeating]</i>
OPT	No. 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	Yes, A causes I. This is because each event is causing the subsequent event, creating a chain of causation from A to I.
GPT-3	Yes, A causes I.
Luminous	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. The answer is yes. Q: If A causes B, B causes C <i>[repeating]</i>
OPT	No. 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	Yes, A causes J. This is because each event is causing the subsequent event, creating a chain of causation from A to J.
GPT-3	Yes, A causes J.
Luminous	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, I causes J, A causes J. The answer is yes. Q:
OPT	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, I causes J. 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? <i>[continued]</i>

1.2 Propositional Logic (Chain of Thought; Prefix Samples 1) - Sub chains

“If A causes B and B causes C. Does A cause B?”	
GPT-4	Yes, A causes B. It’s stated in the first part of your sentence.
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 B. The answer is no. 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 B cause C?”	
GPT-4	Yes, if B causes C is stated, then B does cause C.
GPT-3	Because A causes B and B causes C, B 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, B causes C. The answer is no. 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 A cause A?”	
GPT-4	No, A causing B and B causing C does not imply that A causes A. These are separate events.
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	No. The answer is no. 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	No, B does not cause E directly. B causes C, which then leads to a chain of events causing D, E, and F. But B itself does not directly cause E.
GPT-3	Because B causes C and C causes D, B causes D. D causes E, so B causes E. The answer is yes.
Luminous	Because A causes B, B causes C, C causes D, D causes E, E causes F, B causes E. The answer is yes. Q: If A causes B, B causes C, C causes D, D causes E <i>[repeating]</i>
OPT	Because B causes C, C causes D, D causes E, E causes F. The answer is no. Q:If A causes B, B causes C, C causes D, D causes E, E causes F. Does A cause E? <i>[continued]</i>

1.3 Propositional Logic (Chain of Thought; Prefix Samples 1) - Randomized Variable

“If A causes B and B causes C. Does B cause A?”	
GPT-4	No, B does not cause A. The causality flows from A to B to C, not the other way around.
GPT-3	Because A causes B and B causes C, B causes A. 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, B causes A. The answer is no. 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 causing A would imply a circular causality, which is not necessarily true just because A causes B and B causes C. The original statements only establish a one-way direction of causality from A to B to C.
GPT-3	Because A causes B and B causes C, C does not cause A. The answer is no.
Luminous	Because A causes B and B causes C, C causes A. 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 no. 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	No, E does not cause B. The sequence of causation goes from A to F, not the other way around.
GPT-3	No, E does not cause B.
Luminous	Because A causes B, B causes C, C causes D, D causes E, E causes F, E causes B. The answer is yes. Q: If A causes B, B causes C, C causes D, D causes E <i>[repeating]</i>
OPT	Because E causes B, B causes C, C causes D, D causes E, E causes F. The answer is no. Q: If A causes B, B causes C, C causes D, D causes E, E causes F. Does E cause A? <i>[continued]</i>
“If B causes C and A causes B. Does A cause C?”	
GPT-4	Yes, if A causes B and B causes C, then A indirectly causes C.
GPT-3	Because B causes C and A causes B, A causes C. The answer is yes.
Luminous	Because B causes C and 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>
OPT	Because A causes B and B causes C, A causes C. The answer is no. 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	No, C causing A would create a circular causality, which is generally not accepted in logic. The original statements indicate a one-way direction of causality from A to B to C. It does not imply that C causes A.
GPT-3	Because B causes C and A causes B, A causes C. The answer is yes.
Luminous	Because B causes C and A causes B, C causes A. The answer is yes. Q: If A causes B and B causes C. Does A cause C? <i>[continued]</i>
OPT	Because B causes C and A causes B, C causes A. The answer is no. Q: If A causes B and B causes C. Does A cause C? <i>[continued]</i>
“If G causes Q and Q causes S. Does G cause S?”	
GPT-4	Yes, G causes S. This is because G causes Q, and Q in turn causes S, creating a chain of causation from G to S.
GPT-3	Yes, G causes S.
Luminous	Because G causes Q and Q causes S, G causes S. The answer is yes. Q: If X causes Y and Y causes Z. Does X cause Z? <i>[continued]</i>
OPT	Because G causes Q and Q causes S, G causes S. The answer is no. Q: If A causes B and B causes C. Does A cause C? <i>[continued]</i>
“If Q causes S and G causes Q . Does G cause S?”	
GPT-4	Yes, because G causes Q and Q causes S, it can be inferred that G causes S.
GPT-3	Yes, G causes S.
Luminous	Because Q causes S and G causes Q, G causes S. The answer is yes. Q: If X causes Y and Y causes Z. Does X cause Z? <i>[continued]</i>
OPT	No. The answer is no. Q: If A causes B and B causes C. Does A cause C? <i>[continued]</i>