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Propositional Logic

Knowledge Base:

1. Alice is the mother of Bob
2. Bob is the father of Charlie
3. A father is a parent
4. A mother is a parent
5. All parents have children
6. If someone is a parent, their children are siblings.
7. Alice is married to David.

Step-by-Step:

1. Knowledge Base

2. Hypothesis:

"Charlie is a sibling of Bob"

3. Entailment Process:

Father and mother are parents.

People who have a same parent are siblings

Since Alice is the mother of Bob

and Bob

If someone is a parent

If two people are ~~children~~ siblings, then they should have a common parent.

Alice is

If both Alice and Bob are parents.

Charlie and Bob are siblings.

4. Conclusion :

The hypothesis "Charlie is sibling of Bob" is true. Therefore the hypothesis is entailed by the knowledge base.