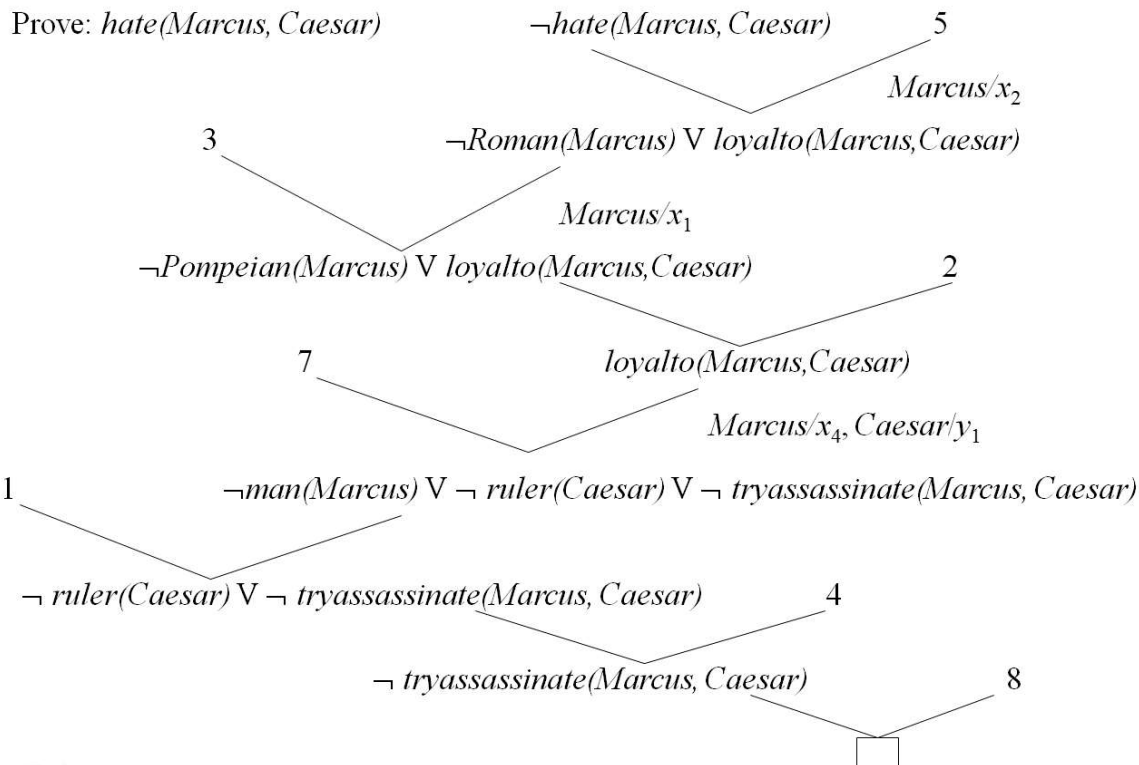


- A Predicate Logic Example

1. Marcus was a man
 $\text{Man}(\text{Marcus})$
2. Marcus was a Pompeian
 $\text{Pompeian}(\text{Marcus})$
3. All Pompeians were Romans
 $\forall x: \text{Pompeian}(x) \rightarrow \text{Roman}(x)$
4. Caesar was a ruler
 $\text{Ruler}(\text{Caesar})$
5. All Romans were either loyal to Caesar or hated him
 $\forall x: \text{Roman}(x) \rightarrow \text{Loyalto}(x, \text{Caesar}) \vee \text{Hate}(x, \text{Caesar})$
6. Everyone is loyal to someone
 $\forall x: \exists y: \text{Loyalto}(x, y)$
7. People only try to assassinate rulers they aren't loyal to
 $\forall x: \forall y: \text{Person}(x) \wedge \text{Ruler}(y) \wedge \text{Tryassassinate}(x, y) \rightarrow \neg \text{Loyalto}(x, y)$
8. Marcus tried to assassinate Caesar
 $\text{Tryassassinate}(\text{Marcus}, \text{Caesar})$
9. All men are people
 $\forall x: \text{Man}(x) \rightarrow \text{Person}(x)$

- A Resolution Proof

1. $\text{Man}(\text{Marcus})$
2. $\text{Pompeian}(\text{Marcus})$
3. $\neg \text{Pompeian}(x_1) \vee \text{Roman}(x_1)$
4. $\text{Ruler}(\text{Caesar})$
5. $\neg \text{Roman}(x_2) \vee \text{Loyalto}(x_2, \text{Caesar}) \vee \text{Hate}(x_2, \text{Caesar})$
6. $\text{Loyalto}(x_3, y_2)$
7. $\neg \text{Man}(x_4) \vee \neg \text{Ruler}(y_1) \vee \neg \text{Tryassassinate}(x_4, y_1) \vee \neg \text{Loyalto}(x_4, y_1)$
8. $\text{Tryassassinate}(\text{Marcus}, \text{Caesar})$



- A Resolution Proof

- 5, 3, 2, 7, 1, 4, 8