

Resolution FOL

KB

- 1. Marcus was a man.
- 2. Marcus was a pompeian
- 3. All pompeians were romans
- 4. Caesar was a ruler.
- 5. All romans were either loyal to caesar or hated him.
- 6. Everyone is loyal to someone.
- 7. People only try to assassinate rulers they are not loyal to.
- 8. Marcus tried to assassinate Caesar.
- 9. All man are people

FOL

FOL representation :

1. *Man (Marcus)*
2. *Pompeian (Marcus)*
3. $\forall x \text{ Pompeian}(x) \Rightarrow \text{Roman}(x)$
4. *Ruler (Caesar)*
5. $\forall x \text{ Roman}(x) \Rightarrow \text{Loyalto}(x, \text{Caesar}) \vee \text{Hate}(x, \text{Caesar})$
6. $\forall x \exists y \text{ Loyalto}(x, y)$
7. $\forall x \forall y \text{ Person}(x) \wedge \text{Ruler}(y) \wedge \text{Trytoassassinate}(x, y) \Rightarrow \neg \text{Loyalto}(x, y)$
8. *Trytoassassinate (Marcus, Caesar)*
9. $\forall x \text{ Man}(x) \Rightarrow \text{Person}(x)$

CNF

CNF representation :

1. *Man (Marcus)*
2. *Pompian (Marcus)*
3. $\sim \text{Pompeian}(x) \vee \text{Roman}(x)$
4. *Ruler (Caesar)*
5. $\sim \text{Roman}(x) \vee \text{Loyalto}(x, \text{Caesar}) \vee \text{Hate}(x, \text{Caesar})$
6. *Loyalto (x, F(x))*
7. $\sim \text{Person}(x) \vee \sim \text{Ruler}(y) \vee \sim \text{Trytoassassinate}(x, y) \vee \sim \text{Loyalto}(x, y)$
8. *Trytoassassinate (Marcus, Caesar)*
9. $\sim \text{Man}(x) \vee \text{Person}(x)$

