

## "Question"

Write Some Sentences in FOL Language

In a First-Order Logic (FOL) Knowledge base System, Sentences are represented using a formal notation that includes Variables, Constants, Predicates and quantifiers. Here are ~~20~~ some example Sentences in FOL.

- 1- All humans are mortal  
 $\forall x (\text{Human}(x) \rightarrow \text{Mortal}(x))$
- 2- Socrates is a Human  
 $\text{Human}(\text{Socrates})$
- 3- If Someone is a Parent, they are also a grandparent  
 $\forall x (\text{Parent}(x, y) \rightarrow \text{Grandparent}(x, y))$
- 4- Mary is a parent of John  
 $\text{Parent}(\text{Mary}, \text{John})$
- 5- For Every Student, there exists a teacher who teaches them  
 $\forall x \exists y \text{Teaches}(y, x)$
- 6- Some birds can Fly  
 $\exists x (\text{Bird}(x) \wedge \text{can Fly}(x))$



DATE: \_\_\_/\_\_\_/\_\_\_

7- All triangles have three sides  
 $\forall x (\text{Triangles}(x) \rightarrow \text{Has Sides}(x, 3))$

8- Every mammal has a heart  
 $\forall x (\text{Mammal}(x) \rightarrow \text{Has Heart}(x))$

9- All prime numbers are positive  
 $\forall x (\text{Prime}(x) \rightarrow \text{Positive}(x))$

10- Some fruits are red  
 $\exists x (\text{Fruits}(x) \wedge \text{Red}(x))$

11- A happy person is happy if they have good friends  
 $\forall x (\text{Person}(x) \rightarrow (\text{Good Friends}(x) \rightarrow \text{Happy}(x)))$

12- There are no married siblings  
 $\forall x \forall y (\text{Siblings}(x, y) \rightarrow \neg \text{Married}(x, y))$

13- Every even number is divisible by 2  
 $\forall x (\text{Even}(x) \rightarrow \text{Divisible by}(x, 2))$

14- Some cars are red and fast  
 $\exists x (\text{car}(x) \wedge \text{Red}(x) \wedge \text{Fast}(x))$

15- All books are written by authors  
 $\forall x (\text{Book}(x) \rightarrow \exists y (\text{Author of}(y, x)))$

