

DSAIUebung-004 -- Predicate Logic Translations

I) Translate the following sentences into predicate logic

natural language sentences | *predicate logic*

1.

Ghosts do not exist. $\forall x: \text{isGhost}(x) \Rightarrow \neg \text{exists}(x)$

2.

Everyone loves Helene Fischer. $\forall x: \text{isHuman}(x) \Rightarrow \text{lovesHeleneFischer}(x)$

3.

Someone actually likes asparagus. $\exists x: \text{isHuman}(x) \Rightarrow \text{likesAsparagus}(x)$

4.

All things that breath are alive. $\forall x: \text{isBreathing}(x) \Rightarrow \text{isAlive}(x)$

5.

No human being is immortal. $\forall x: \text{isHuman}(x) \Rightarrow \neg \text{isImmortal}(x)$

6.

All that glitters is not gold. $\forall x: \text{isGlittering}(x) \Rightarrow \neg \text{isGold}(x)$

7.

Most Japanese watches are durable and reliable.

$\exists x: \text{isAWatchMadeInJapan}(x) \Rightarrow \neg \text{isDurableAndReliable}(x)$

8.

Every human being is afraid of something. $\forall x: \text{isHuman}(x) \Rightarrow \text{isAfraidOfSomething}(x)$

9.

Some animals hunt everything that flies. $\exists x, \forall y: \text{isHuntingAnimal}(x) \wedge \text{isFlying}(y)$

10.

Not all vegans like all vegetables. $\neg \forall x: \text{isVegan}(x) \Rightarrow \neg \forall y: \text{isAVegetable}(y) \wedge \text{likes}(x,y)$

or: $\forall x: \text{isVegan}(x) \Rightarrow \exists y: \text{isAVegetable}(y) \wedge \neg \text{likes}(x,y)$
