

1. Buat FOL dari kalimat berikut :

• Every gardener likes the sun

$$\forall x (\text{Gardener}(x) \rightarrow \text{likes}(x, \text{Sun}))$$

• All purple mushroom are poisonous

$$\forall x (\text{purpleMushroom}(x) \rightarrow \text{poisonous}(x))$$

• You can fool some of the people all of the time

$$\exists x (\text{Person}(x) \wedge \forall y (\text{Time}(y) \rightarrow \text{Fool}(x, y)))$$

• You can fool ~~all~~ of the people some of the time

$$\forall x (\text{Person}(x) \rightarrow \exists y (\text{Time}(y) \wedge \text{Fool}(x, y)))$$

• No purple mushroom is poisonous

$$\forall x (\text{purplemushroom}(x) \rightarrow \neg \text{Poisonous}(x))$$

2. KB: All cats like fish, cats eat everything they like, and ziggy is a cat

a. All cats like fish =  $\forall x (\text{cat}(x) \rightarrow \text{likes}(x, \text{Fish}))$

cats eat everything they like =  $\forall x \forall y ((\text{cat}(x) \wedge \text{likes}(x, y)) \rightarrow \text{eats}(x, y))$

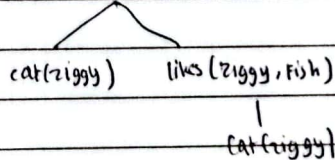
ziggy is a cat =  $\text{cat}(\text{ziggy})$

b. Fact 1:  $\text{cat}(\text{ziggy})$

Fact 2:  $\text{likes}(\text{ziggy}, \text{fish})$

Fact 3:  $\text{cat}(\text{ziggy}) \wedge \text{likes}(\text{ziggy}, \text{fish}) \rightarrow \text{eats}(\text{ziggy}, \text{fish}) = \text{eats}(\text{ziggy}, \text{fish})$

c.  $\text{eats}(\text{ziggy}, \text{fish})$



Maka Jika  $\text{cat}(\text{ziggy}) \rightarrow \text{eat}(\text{ziggy}, \text{fish})$

d.  $\text{cat}(\text{ziggy})$

$\neg \text{cat}(x) \vee \text{likes}(x, \text{fish})$

$\neg \text{cat}(x) \vee \neg \text{likes}(x, y) \vee \text{eats}(x, y)$

$\neg \text{eats}(\text{ziggy}, \text{fish})$

steps

$\neg \text{cat}(\text{ziggy}) \vee \text{likes}(\text{ziggy}, \text{fish})$

$\text{likes}(\text{ziggy}, \text{fish}) \vdash \neg \text{cat}(x) \vee \neg \text{likes}(x, y) \vee \text{eats}(x, y)$

$\neg \text{cat}(\text{ziggy}) \vee \text{eats}(\text{ziggy}, \text{fish}) \vdash \text{eats}(\text{ziggy})$

$\text{eats}(\text{ziggy}, \text{fish}) \vdash \neg \text{eats}(\text{ziggy}, \text{fish})$

kontradiksi