

Math 2283 - Introduction to Logic

Quiz #1 - 2006.08.23

Solutions

References:

c refers to Clyde Frog

e refers to Eric

p refers to Peter Panda

r refers to Rumpletumskin

Predicates:

Dx is “ x drinks tea”

Lx is “ x likes tea parties”

$Twxyz$ is “ w will invite x , y and z to a tea party ”

Sxy is “ x is more strong and handsome than y ”

Using the references and predicates given above, write English statements that express the meaning of the following formulas.

1. Dr

Rumpletumskin drinks tea.

2. Sce

Clyde Frog is more strong and handsome than Eric.

3. $Dp \vee Lp$

Peter Panda drinks tea or likes tea parties.

4. $Lc \wedge Lp \wedge Lr \Rightarrow Tecpr$

If Clyde Frog, Peter Panda and Rumpletumskin like tea parties, then Eric will invite Clyde Frog, Peter Panda and Rumpletumskin to a tea party.

Using the references and predicates given above, write the formulas that express the meanings of the following sentences.

1. Clyde Frog does not like tea parties but does drink tea.

$\neg Lc \wedge Dc$

2. If Rumpletumskin drinks tea and Eric likes tea parties, then Eric will invite Rumpletumskin, Peter Panda and Clyde Frog to a tea party.

$Dr \wedge Le \Rightarrow Terpc$