# hw5

## jalbert1

## March 2017

## 8.8

$Jim \neq George$
$Spouse(Jim, Laura)$
$\forall X : X \neq Jim \wedge\ Spouse(X, Laura)$
$therefore\ Spouse(George, Laura)$

## 8.10

$a)Occupation(Emily, Surgeon) \vee Occupation(Emily, Lawyer)$
$b)Occupation(Joe, Actor) \wedge \exists!X : X \neq Actor \wedge Occupation(Joe, X)$
$c)\forall X : Occupation(X, Surgeon) \Rightarrow Occupation(X, Doctor)$
$d)\forall X : Occupation(X, Lawyer) \Rightarrow Customer(Joe, X)$
$e)\exists!X : Boss(X, Emily) \Rightarrow Occupation(X, Lawyer)$
$f)\exists X, \forall Y (Occupation(X, Lawyer) \Rightarrow (Customer(Y, X) \Rightarrow Occupation(Y, Doctor)))$
$g)\forall X, \exists Y : Occupation(X, Surgeon) \Rightarrow Customer(X, Y)$

## 8.28

$b)\neg Wrote(Gershwin, "EleanorRigby.")$
$d)\exists X : Wrote(Joe, X)$
$g)\forall X, \exists Y : Sings(Y, X, Revolver) \Rightarrow Y \neq Gershwin$
$h)\forall X, \exists Y\ :\ Wrote(Gershwin, X)\ \Rightarrow\ Sings(Gershwin, X, Y)k)\forall X, \exists Y, \exists Z\ :$
$Sings(McCartney, X, Y) \Rightarrow (CopyOf(Z, Y) \wedge Owns(Joe, Z))$