

Logic I
Fall 2009
Quiz 6

Determine the truth value of each of the sentences below on the following interpretation:

UD: {McCain, Obama, Damien}

D : {⟨Obama⟩}

R : {⟨McCain⟩}

P : {⟨Damien⟩}

O : {⟨McCain, Obama⟩, ⟨McCain, Damien⟩, ⟨Obama, Damien⟩}

m : McCain

o : Obama

d : Damien

1. $Oom \vee Do$
2. $(\exists x)Oox$
3. $(\forall z)(\neg m = z \supset Omz)$
4. $(\exists x)(\neg x = m \ \& \ \neg Oxd)$
5. $(\exists y)(\exists x)(Dy \ \& \ Oxy)$
6. $(\forall x)((Dx \vee Rx) \supset \neg Odx)$
7. $(\forall x)(\neg(\exists z)Oxz \supset Px)$
8. $(\forall y)(\exists z)Ozy$
9. $(\exists z)(\forall y)(\neg y = z \supset Oyz)$
10. $(\forall y)(\forall x)((Ry \supset Oyx) \equiv \neg Rx)$

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