

A Sample Model for Predicate Logic (PredL)

$D = \{ \text{Plato, Aristotle, Carol, Nancy, Michael, Oscar, Bertrand, Fido} \}$

$Val(a) = \text{Aristotle}$

$Val(m) = \text{Michael}$

$Val(b) = \text{Bertrand}$

$Val(n) = \text{Nancy}$

$Val(c) = \text{Carol}$

$Val(o) = \text{Oscar}$

$Val(f) = \text{Fido}$

$Val(p) = \text{Plato}$

$Val(\text{MAN}) = \{ \text{Plato, Aristotle, Michael, Oscar, Bertrand} \}$

$Val(\text{WOMAN}) = \{ \text{Nancy, Carol} \}$ $Val(\text{DOG}) = \{ \text{Fido} \}$

$Val(\text{GREEK}) = \{ \text{Plato, Aristotle, Michael, Nancy} \}$

$Val(\text{ADMIRE}) = \{ \langle \text{Plato, Aristotle} \rangle, \langle \text{Aristotle, Plato} \rangle, \langle \text{Bertrand, Aristotle} \rangle \}$

$Val(\text{FATHER}) = \{ \langle \text{Oscar, Michael} \rangle \}$

$Val(\text{BETWEEN}) = \{ \langle \text{Fido, Plato, Aristotle} \rangle, \langle \text{Fido, Aristotle, Plato} \rangle \}$

$Val(\text{GIVE}) = \{ \langle \text{Plato, Fido, Aristotle} \rangle \}$

Relative to the above model, are the following PredL formulas true or false?

(1) $\text{GREEK}(p)$

(2) $\text{MAN}(n) \vee \text{WOMAN}(n)$

(3) $\sim(\text{GREEK}(b) \ \& \ \text{MAN}(b))$

(4) $\text{ADMIRE}(b, a) \ \& \ \text{ADMIRE}(a, b)$

(5) $\text{ADMIRE}(p, a) \ \& \ \text{ADMIRE}(b, a)$

(6) $\sim(\text{GREEK}(f) \ \vee \ \text{GIVE}(p, a, f))$

(7) $\text{BETWEEN}(f, p, a) \rightarrow \text{BETWEEN}(p, f, a)$