

LOGIC (SYNTAX)		MODEL THEORY (SEMANTICS)	
1 st order language	$L = \langle C, P \rangle$	model (structure) for language L	$M = \langle D, I \rangle$
		domain, universe (of discourse)	$dom(M) = D$
set of constants	$const(L) = C$	interpretation (valuation)	$I : const(L) \rightarrow dom(M)$
set of predicate symbols	$pred(L) = P$		$I : pred(L) \rightarrow \wp tuple(dom(M))$
valence	$val_L : pred(L) \rightarrow Natno$		
set of formulas	$fmla(L)$	extended interpretation	$I : fmla(L) \rightarrow \wp tuple(dom(M))$
set of sentences	$sent(L) \subseteq fmla(L)$		$I : sent(L) \rightarrow truth = \wp 1 \cong \{f, t\}$
variable	$x \in var$		
constant	$c \in const(L)$	element, member	$I[c] \in dom(M)$
predicate (relation) symbol	$p \in pred(L), val_L(p) = n$	predicate, relation	$I[p] \subseteq dom(M)^n$
formula	$\phi \in fmla(L)$	predicate, relation	$I[\phi] \subseteq dom(M)^n$
sentence	$\sigma \in sent(L)$	truth value	$I[\sigma] \subseteq truth$
theory	$\Sigma \subseteq sent(L)$		
entailment	$\Sigma \vdash \sigma$		
		satisfaction	$M \models \sigma$
theory of a model	$th(M)$		
models of a theory	$mod(\Sigma)$		