

HW 8**Due:** 24 September 2009**Prof. Caldwell****COSC 2300****Assignment:**

1. Read Chapter 4 of the class notes.
2. Draw syntax trees for the following formulas of predicate logic. For each formula, say whether you think the formula is true or false when the domain of discourse is the natural numbers ($\mathbb{N} = \{0, 1, 2, 3, \dots\}$). You don't need to create a proof – just to consider the formulas informally.

a.) $\forall i. \forall j. \exists k. ((i < k) \wedge (k < j)) \Rightarrow (i < j)$

b.) $\forall i. \forall j. ((i \leq j) \wedge (j \leq k)) \Rightarrow (i = j)$

c.) $\forall i. \exists j. j < i$

d.) $(\forall i. i = 0) \vee \forall j. (j + 1) > 0$