

Extra Problem 1

For terms t and t^* and variable x , let $t^*(x; t)$ be the result of replacing the occurrences of x in t^* by occurrences of t .

Let \mathfrak{A} be a model and let s be a variable assignment. Let x be a variable and let t be a term. Let s' be like s except that $s'(x) = \text{den}_{\mathfrak{A}}^s(t)$. Prove by induction on length that, for all terms t^* ,

$$\text{den}_{\mathfrak{A}}^{s'}(t^*) = \text{den}_{\mathfrak{A}}^s(t^*(x; t)).$$