Let $A$ be a nonempty array-of-naturals variable

$$A: \text{[}(\text{nat}+1)^*\text{nat}]$$

and there are no other variables.

(a) Express $A(A(A\,0)):=A\,0$ without using $:=$.  

$A' = A(A\,0) \rightarrow A\,0 \mid A$

or $A'(A(A\,0)) = A\,0 \land (\forall j: j+A(A\,0) \Rightarrow A'j = A\,j)$

(b) Suppose initially $A = [2; 0; 1]$. What is the final value after execution of the array element assignment in part (a)?

$A' = [2; 2; 1]$