317   Let A be a nonempty array-of-naturals variable
           A: [(nat+1)*nat]
       and there are no other variables.
(a)   Express $A(A(A\,0)):=A\,0$ without using := .
(b)   Suppose initially $A = [2;\ 0;\ 1]$. What is the final value after execution of the array
       element assignment in part (a)?

After trying the question, scroll down to the solution.

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

§ $A' = A(A\ 0) \rightarrow A\ 0\ |\ A$

or $A'(A(A\ 0)) = A\ 0\ \wedge\ (\forall j\cdot\ j{\neq}A(A\ 0)\ \Rightarrow\ A'j = A\ j)$

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

§ $A' = [2;\ 2;\ 1]$