$\alpha(x) = (x-\varepsilon)(x-0)(x-1)(x-01)(x-11)(x-010)(x-111)(x-0101)(x-1110)$

$u(x) = (x-\mathbf{00})(x-\mathbf{000})(x-\mathbf{0001})(x-\mathbf{1111})$

$\alpha'(x) = \alpha(x)u(x) \Rightarrow$ commitment to $u(\cdot)$ is "append-only" proof