

1067-22-1287

Kendall Williams* (kendallist@yahoo.com). *Elements of Polynomials evaluated at points of βS* . Preliminary report.

Given a set S with the discrete topology where both (S, \cdot) and $(S, +)$ are semigroups, one may extend the operations on S to βS , the Stone-Ćech Compactification of S . βS is comprised of the ultrafilters on S . With respect to each of its operations individually, βS is a compact right topological semigroup containing S in its topological center.

Let $k \in \mathbb{N}$ and $g(z_1, z_2, \dots, z_k)$ be an arbitrary polynomial with coefficients in S . We shall evaluate g on certain elements of βS , say p_1, p_2, \dots, p_k ; making $g(p_1, p_2, \dots, p_k)$ itself an ultrafilter on S . We characterize subsets of S that must be elements of the ultrafilter $g(p_1, p_2, \dots, p_k)$. (Received September 20, 2010)