

Meeting: 1004, Bowling Green, Kentucky, SS 2A, Special Session on Graph Theory

1004-05-71 **André E Kézdy*** (kezdy@louisville.edu), Department of Mathematics, University of
Louisville, Louisville, KY 40292. *ρ -valuations for some stunted trees.* Preliminary report.

A tree with n edges is *stunted* if its edges can be labeled with integers $1, \dots, n$ so that e_1 and e_2 are incident, and, for all $j = 3, \dots, n$, edge e_j is incident to at least one edge e_k satisfying $2k \leq j - 1$.

A ρ -valuation of a graph with n edges is an injection of the vertex set into the set $\{0, 1, \dots, 2n\}$ so that, if the edge-labels induced by the absolute value of the difference of the vertex labels are $\ell_1, \ell_2, \dots, \ell_n$, then $\ell_i = i$ or $\ell_i = 2n + 1 - i$.

Using the “Combinatorial Nullstellensatz” technique, I prove that if $p = 2n + 1$ is prime, then every stunted tree on n edges has a ρ -valuation. Consequently, every stunted tree on n edges cyclically decomposes the complete graph K_p . (Received January 17, 2005)