

1125-17-1194 **Stefanie Wang*** (sgwang@iastate.edu), 396 Carver Hall, Mathematics Department, Iowa State University, Ames, IA 50011. *Super-Catalan numbers and rooted binary trees*. Preliminary report.

A quasigroup is a structure equipped with nonassociative binary operations of multiplication, left division, and right division. Rooted binary trees with n leaves represent the number of ways to bracket a word with n arguments involving a single nonassociative binary operation. While Catalan numbers count rooted binary trees with n leaves, we are interested in the super-Catalan numbers that count the quasigroup words with n arguments. We will also discuss the relationship between super-Catalan numbers and the quasigroup of integer-valued functions on the vertex set of an infinite tree of valency four. (Received September 15, 2016)