1047-13-122 **Javid Validashti*** (`jvalidas@math.ku.edu`), Department of Mathematics, 405 Snow Hall, The University of Kansas, Lawrence, KS 66045. *Relative Multiplicities of Graded Algebras.*

Let R be a Noetherian local ring and $A \subset B$ standard graded Noetherian R-algebras. We define a sequence of relative multiplicities for the pair $A \subset B$ and we study the properties of these numbers to give numerical criteria for integrality and birationality of the extension $A \subset B$, specially when A and B are Rees algebras of a pair of modules. (Received January 23, 2009)