1018-11-49 **Samit Dasgupta*** (samit_dasgupta@yahoo.com), 1 Oxford St, Department of Mathematics, Harvard University, Cambridge, MA 02138. *Shintani zeta-functions and Gross-Stark units for totally real fields.*

Let F be a totally real number field and let p be a finite prime of F, such that p splits completely in the finite abelian extension H of F. Stark has proposed a conjecture stating the existence of a p-unit in F with absolute values at the places above p specified in terms of the values at zero of the partial zeta functions associated to H/F. Gross proposed a refinement of Stark's conjecture which gives a conjectural formula for the image of Stark's unit in $F_p^\times/E$, where F_p denotes the completion of F at p and E denotes the topological closure of the group of totally positive units of F. We propose a further refinement of Gross' conjecture by proposing a conjectural formula for the exact value of Stark's unit in $F_p^\times$. Our formula may be viewed as an explicit class field theory for F. (Received February 17, 2006)