1035-05-99   **Audrey A. Terras*** (`aterras@ucsd.edu`), 9500 Gilman Dr., Math. Dept., U.C.S.D., La Jolla, CA 92093-0112. *Fun with zeta functions of graphs.*

I will present an introduction to zeta functions of graphs along with some history and comparisons with other zetas from number theory and geometry such as Riemann's and Selberg's. Three kinds of graph zetas will be defined: vertex, edge and path. The basic properties will be discussed including the Ihara formula saying that the zeta function is the reciprocal of a polynomial. I will then explore analogs of the Riemann hypothesis, zero (pole) spacings, and connections with expander graphs and quantum chaos. The graph theory version of the prime number theorem will be discussed. The graphs will be assumed to be finite undirected possibly irregular. References include my joint papers with Harold Stark in Advances in Math. (Received August 20, 2007)