Rayleigh-Bénard convection is a much researched thermodynamical phenomenon, yet significant questions remain. In this talk, we will present one new result: a verified calculation of the critical Rayleigh number $R_*$ and critical wave number $k_*$ for the inhomogeneous planar Bénard problem. Our methods draw on both error-bounded interval computations, as well as more traditional analytic techniques of classical fluid dynamics. (Received September 21, 2010)