I will consider systems of exponential equations over the real and complex fields, with particular emphasis on algorithmic questions and families of such systems. Thus one may ask for an algorithm for testing solvability of a system, or one may ask, for a family of systems naturally indexed by points of some space, the topology of the set of points in the parameter space corresponding to solvable systems. Both questions are deeply connected to transcendental number theory and analytic geometry. The algorithmic problem is solvable in the real case, assuming Schanuel's Conjecture, and is unconditionally unsolvable in the complex case. The problem for families has a nice answer for the real case, unconditionally. For the complex case, there is a profound conjecture of Zilber which gives an attractive answer, and which involves both Schanuel's Conjecture and very hard model theory. Zilber's Conjecture goes far beyond anything known in the analysis of several complex variables. I will sketch the basic ideas,and ,if time permits, discuss analogues for elliptic functions.