1011-06-299 **Jonathan David Farley*** (lattice@math.harvard.edu), Center for International Security (CISAC), Stanford University, 616 Serra St. E200, Stanford, CA 94305. *Tensor Products of Semilattices, Semimodularity and Supersolvability (A Problem of E. T. Schmidt from 1974 and Some Conjectures of Quackenbush from 1985).*

If M is a finite complemented modular lattice with n atoms and D is a bounded distributive lattice, then the Priestley power $M[D]$ is shown to be isomorphic to the poset of normal elements of D^n, thus solving a problem of E. T. Schmidt from 1974. It is shown that there exist a finite modular lattice A not having M_4 as a sublattice and a finite modular lattice B such that $A \otimes B$ is not semimodular, thus refuting a conjecture of Quackenbush from 1985. It is shown that the tensor product of M_3 with a finite modular lattice B is supersolvable if and only if B is distributive, thus proving a conjecture of Quackenbush from 1985. (Received August 30, 2005)