1077-18-447   **Pavel Etingof***, Department of Mathematics, MIT, 77 Massachusetts Ave., Cambridge, MA
02139, and **Shlomo Gelaki**, Department of Mathematics, Technion - Israel Institute of
Technology, Haifa, Israel. *Forms of tensor categories over arbitrary fields.*

We explain how to classify forms of a tensor category over a not necessarily algebraically closed field, and give explicit examples of classification of such forms. We also discuss the problem of categorification of weak fusion rings, and classify categorifications for the simplest families of such rings. This leads to interesting questions in both elementary and advanced number theory, such as the classification of regular polygons constuctible by compass and ruler (i.e., Fermat primes), the Merkurjev-Suslin theorem, and global class field theory. (Received September 01, 2011)

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