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The notion of Frobenius-Schur (FS)-indicators of a finite group representation has been developed for more than a century. The n th FS-indicators can be obtained by counting the number of solutions x for the equation $x^n = g$ in a finite group. It was not known until recently that FS-indicators and exponents are invariants of the tensor categories of finite group representations. These notions can be further extended to pivotal fusion categories. However, their relations are not obvious in such a general setting. In this talk, we will discuss some relations between FS-indicators and exponents for spherical fusion categories, and their applications to quasi-Hopf algebras. (Received July 19, 2007)