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Gregory V. Bard* (bardg@uwstout.edu), Dept. of Math., Stat., and Comp. Sci., Jarvis Hall Science Wing, University of Wisconsin—Stout, Menomonie, WI 54751. *Computing the Least Factorial that Multiplies a Rational Number into an Integer.*

Given a rational number q , can one compute the smallest possible n such that $n!q$ is an integer? This seemingly simple question is deeper than it sounds, and suggests several cute tangential lemmas. The author suggests an algorithm for solving this problem based on rewriting the denominator of q in base 2, base 3, base 5, base 7, and so forth, up to a certain limit.

The algorithm touches on questions which frequently come up in undergraduate mathematics competitions, such as how many trailing zeroes are found in $2014!$, etc... In any case, the talk is meant to be suitable for undergraduates, and only assumes knowledge of modular arithmetic. (Received September 17, 2014)