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Aaron Levin* (adlevin@math.brown.edu). *Ideal Class Groups and Rational Torsion in Jacobians of Curves.*

We study the problem of constructing and enumerating, for any integers $m, n > 1$, number fields of degree n whose ideal class groups have “large” m -rank. Our technique, which appears to be new, relies on the Hilbert Irreducibility Theorem and finding certain curves whose Jacobians have a large rational torsion subgroup. Using this technique we improve on results of Azuhata-Ichimura, Nakano, Bilu-Luca, and others. (Received February 14, 2007)