1037-97-42 **Al Cuoco*** (acuoco@edc.org), 55 Chapel Street, Newton, MA 02458. *The Mathematics of Task Design.*

In addition to the mathematics used in the classroom, teachers are faced with many mathematical questions when they design lessons, develop problem sets, or create assessments. One kind of question that comes up repeatedly in high school teachers' lesson planning is how to create problems that "come out nice"—integer sided scalene triangles with a 60 degree angle, integer coefficient polynomials with rational roots and critical points, or lattice point triangles with integer side lengths. We'll look at some general purpose tools for creating such problems with techniques that come squarely from undergraduate mathematics: norms from quadratic fields and rational points on conics. These techniques have formed the basis of professional development work with teachers in the Boston area. (Received January 13, 2008)