

## **Advanced Challenge Level 1 Problems**

**Advanced challenge problems are more involved than the regular challenge problems and should be given as take home problems. Many will work very well as group projects. One example is #55, The Polyhedron Challenge. I used this with all levels of students in a wide variety of math courses. It involves research, designing an 'educational' poster, creating 3-dimensional models, and presenting work to the class. Students at all levels enjoyed the project. Another project is #32, The Binomial Divider. There are some real nice connections to higher level math hidden here, as you can probably guess from the name. Some require special devices. For example, #37 requires what I called 'constant velocity vehicles'. I just used some toy, battery operated cars. I used this for my general algebra 1 class to reinforce the concept of slope relative to linear functions. It worked very well. I believe that the 'challenge problem' experience is every bit as important as the traditional math curriculum. What I am sharing with you here are problems that I developed/used over my 43 year career as a math teacher. Some of the ideas came as a result of something I experienced at a teacher conference (NCTM for example) I attended. Others, I created in order to reinforce a specific concept that I thought needed more attention. Some of the ideas came from the students. Level 1 problems are suitable for students who are taking math courses up through Algebra 2. There is a wide range of difficulty levels. They work well to judge student comprehension and overall problem solving development. Enjoy**