

1035-R1-123

Elizabeth A. Burroughs* (burrough@math.montana.edu), Department of Mathematical Sciences, Montana State University, PO Box 172400, Bozeman, MT 59717-2400. *Using Integer Rods to Visualize Induction.*

Using integer rods, students can create a physical justification for the number theory result that the sum of the cubes of the first n integers is equal to the square of the sum. Students can then compare the physical justification to the induction proof of the same result and use it to make sense of and improve the proof by induction. This paper will outline the physical justification and highlight some features of a typical student's proof by induction that can be improved, as well as suggest other problems to which this technique is well-suited. (Received July 25, 2007)