

**Meeting:** 1003, Atlanta, Georgia, SS 21A, AMS Special Session on Mathematics and Mathematics Education in Fiber Arts

1003-00-518      **Lana Holden\*** (yarndiva@abcs.com) and **Joshua Holden** (holden@rose-hulman.edu). *Picking up stitches.*

“Picking up stitches” is a commonly encountered problem in knitting which occurs in situations such as knitting a sleeve directly onto a sweater from the top down. Since most knit stitch patterns do not produce the same number of rows per inch as stitches per inch, the knitter must determine how to most evenly distribute a specified number of stitches along a vertical edge with an unequal number of rows. We define the concept of “evenly distributed” as a system of Diophantine equations, present a practical algorithm for determining in which rows to pick up a stitch, and demonstrate that the algorithm produces the unique solution to the problem. (Received September 19, 2004)