

Math 218 Spring 2017  
Homework 2 Supplemental Problem  
Due: February 3

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1. A chocolate bar consists of  $n$  squares arranged in a rectangular pattern. You split the bar into small squares, always breaking along the lines between the squares. Use induction to prove that it takes  $n - 1$  breaks to split it into the  $n$  smaller squares.

Comment: Chocolate bars are not necessarily one long line of rectangles. When  $n = 6$  the bar could consist of 6 small squares in a row, or it could consist of two rows of 3 squares each.

Here is a picture of a chocolate bar, and some physics on why they typically break at the seams: <http://physics.stackexchange.com/questions/238202/why-do-chocolate-bars-usually-break-at-the-cleavages>