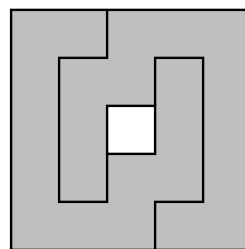
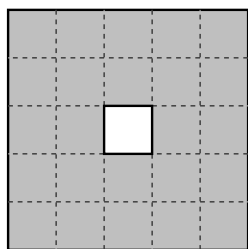


I U P U I  
MATH CLUB TEASER #31

October 16, 2009  
(due October 23, 2009)

The pâtissier Professor Zerep is baking fifteen square mini-cakes. Each cake is 5 by 5 inches as in the left illustration, and the central 1 by 1 inch square is removed to place an ornament.

The Professor wants to cut each cake into two identical pieces along the dotted lines. The right illustration shows one possibility. Each cake must be cut in a different pattern, but patterns that differ by rotation and/or reflection on a mirror are considered the same. Can you help the Professor?



The IUPUI Math Club invites everybody to submit solutions to its weekly recreational mathematics problem. Interested individuals and teams of up to four participants must submit a cover sheet (available at [jagmath.usg.iupui.edu](http://jagmath.usg.iupui.edu)) together with their written solution. At the end of the semester, every IUPUI student that sent a correct solution will receive a certificate of merit. Prizes will be distributed among the IUPUI undergraduate teams that submit the most correct solutions.

Solutions are due one week after each problem is posted, and should be faxed to (317) 274-3460, dropped off in person at LD 270, or sent by campus or U.S. mail to:

**Math Club Teaser**  
Dept. of Mathematical Sciences  
IUPUI, LD-270  
402 N. Blackford Street  
Indianapolis, IN 46202