

Problem of the Week, Fall 2006

25 January 2007

Circle One: Cadet Faculty Student (non USMA) Faculty (non USMA) Other

Last Name (Please Print):

Problem 12

In a state prison, there are 100 cells and 100 (correctional) officers. The cells are numbered 1 through 100, and the officers carry badges numbered 1 through 100. When the first officer patrols the area, all the cell doors open. When the second officer patrols the area the even numbered cells close. (i.e., the cells, 2, 4, 6 ...etc, close) When the third officer patrols the area, the cell doors marked with a multiple of 3 open if they are closed or close if they are open. In this way of open-close scheme, when the officer with the badge number 100 finishes his patrolling, how many open cells are there?

Submission Instructions

Submit to : [MAJ Jong H. Chung](#)

How : As an attachment to an
email(please make sure your
name is in the attachment!)

With the subject line : WP POTW

Failure to follow these directions may result in your submission not
making into the pile in the right order!