

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

Last Name (Please Print):

Problem 18

A local movie theatre is showing one of your favorite movies. A ticket costs \$5.00. There are $2n$ people in the line to the box office. n of the people waiting only have a five dollar bill in their wallets. The other n have a ten dollar bill. Unfortunately, the cashier just ran out of change (i.e. the cashier has no change at all at this time), so the cashier has to use the fivers from the customers for change. Assuming there is no monetary transaction between the people in the line, the box office sells the ticket to one person at a time in the order of waiting, and the people are in line at a random order, what is the probability that the box office sells the tickets to the all $2n$ people?

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!