



# Lewis & Clark College

## Department of Mathematical Sciences

Problem of the Week #10	(Spring 2011)
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Let  $U_1, U_2, \dots$  be independent random variables, and each is uniformly distributed on interval  $[0, 1]$ . For  $0 < x \leq 1$ , let  $N_x$  be the least  $n$  such that

$$\sum_{k=1}^n \sqrt{U_k} > x.$$

Find the expected value of  $N_x$ .

- This problem is due to Shai Covo, Kiryat-Ono, Israel.
- Solvers should include their name, address, and status at the College. Solutions can be addressed to MSC 110 via campus mail or placed in Yung-Pin Chen's mailbox in the Math Department Office. Solutions to the above *Problem of the Week* should be received by 5:00 p.m. Monday, April 11, 2011.
- Jeffrey Cruttenden (jr.), Kathleen Daly (so.), and Brian Walters (jr.) solved *Problem of the Week* #9. Congratulations to them.