

Problem of the Month, March 2009

Please turn all solutions into Dr. Dunn's office, JB 322. You may slide your solutions under his door as well. Most elegant solution of this month's problem wins a \$10 gift certificate to the bookstore! Solutions will be accepted anytime during the month of March, 2009. Good luck!

Dorothy stands on the edge of a cliff; an infinite expanse of land is behind her. Taking one step forward would send her to her doom, whereas one step back would be a step toward safety. All of Dorothy's steps are precisely one foot long. Dorothy has gamely agreed to let her fate be determined by the flip of a coin. She will take one step forward if the result of a toss is heads, one step back if it is tails. If she survives the first toss, she is willing to do it again, and again, stepping forward and back one foot according to the toss of the coin. After an infinite number of tosses she hopes to be wandering off into the infinite expanse behind her. What are Dorothy's chances of survival?