

## Homework 10

Sam Reeves

Smith is in jail and has 1 dollar; he can get out on bail if he has 8 dollars. A guard agrees to make a series of bets with him. If Smith bets  $A$  dollars, he wins  $A$  dollars with probability .4 and loses  $A$  dollars with probability .6.

Find the probability that he wins 8 dollars before losing all of his money if:

- (a) he bets 1 dollar each time (timid strategy).
- (b) he bets, each time, as much as possible but not more than necessary to bring his fortune up to 8 dollars (bold strategy).
- (c) Which strategy gives Smith the better chance of getting out of jail?