

# Gambler's Ruin

The gambler starts with 2

The house starts with 8

The probability that the gambler wins a hand is 0.49

At time 0, the gambler has probability distribution

0.000 0.000 1.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000

At time 1, the gambler has probability distribution

0.000 0.510 0.000 0.490 0.000 0.000 0.000 0.000 0.000 0.000 0.000

At time 2, the gambler has probability distribution

0.260 0.000 0.500 0.000 0.240 0.000 0.000 0.000 0.000 0.000 0.000

At time 3, the gambler has probability distribution

0.260 0.255 0.000 0.367 0.000 0.118 0.000 0.000 0.000 0.000 0.000

At time 4, the gambler has probability distribution

0.390 0.000 0.312 0.000 0.240 0.000 0.058 0.000 0.000 0.000 0.000

At time 5, the gambler has probability distribution

0.390 0.159 0.000 0.275 0.000 0.147 0.000 0.028 0.000 0.000 0.000

At time 6, the gambler has probability distribution

0.471 0.000 0.218 0.000 0.210 0.000 0.086 0.000 0.014 0.000 0.000

At time 7, the gambler has probability distribution

0.471 0.111 0.000 0.214 0.000 0.147 0.000 0.049 0.000 0.007 0.000

At time 8, the gambler has probability distribution

0.528 0.000 0.164 0.000 0.180 0.000 0.097 0.000 0.028 0.000 0.003

At time 9, the gambler has probability distribution

0.528 0.084 0.000 0.172 0.000 0.138 0.000 0.062 0.000 0.014 0.003

At time 10, the gambler has probability distribution

0.571 0.000 0.129 0.000 0.155 0.000 0.099 0.000 0.037 0.000 0.010