PROBLEM 4

Strategy 1 = Choose your first guess
Strategy 2 = Make a second guess

The following is a sample table of results from the program:

#	Strategy 1	Strategy 2
1	32.68 %	66.88 %
2	33.16 %	66.20 %
3	33.94 %	66.56 %
4	34.02 %	67.80 %
5	34.00 %	67.18 %
6	33.58 %	66.42 %
7	33.92 %	65.42 %
8	32.92 %	66.92 %
9	33.96 %	67.46 %
10	33.54 %	67.46 %
11	34.46 %	67.16 %
12	34.22 %	67.06 %
13	34.00 %	65.78 %
14	32.88 %	66.44 %
15	32.80 %	66.98 %
16	32.96 %	67.46 %
17	33.12 %	65.20 %
18	33.26 %	66.50 %
19	34.12 %	66.14 %
20	31.88 %	66.54 %
21	33.22 %	66.72 %
22	32.60 %	66.82 %
23	32.62 %	65.82 %
24	32.60 %	67.04 %
25	34.50 %	66.12 %

Based on the percentage results from those experiments:

Strategy 1 works 33.29% of the time.
Strategy 2 works 66.69% of the time.

During strategy 1, we are making a choice of one out of three doors. Logically then, there should be a 1 in 3 chance (33.33…%) of winning.

During the second strategy, we already know one of the incorrect doors, and therefore are one third *less* likely to *lose* the game. Thus, we are 1/3 more likely to win (giving us a 66.66…% chance).