PROJECT
## DUE MAY 16, 2007

For this project, you may use your textbook, and you may discuss with your fellow group members and your instructor. However, you are on your honor not to use any other resources. Write your answers neatly on a separate page and be sure to explain your reasoning thoroughly. Note: Both statements are taken from wikipedia.org.

(1) A game show offers a contestant the choice of three doors. A thoroughly honest game-show host has placed a car behind one of the three doors. There is a goat behind each of the other doors. The contestant has no prior knowledge that allows them to distinguish among the doors. "First you point toward a door," he says. "Then I'll open one of the other doors to reveal a goat. After I've shown you the goat, you make your final choice whether to stick with your initial choice of doors, or to switch to the remaining door. You win whatever is behind the door."
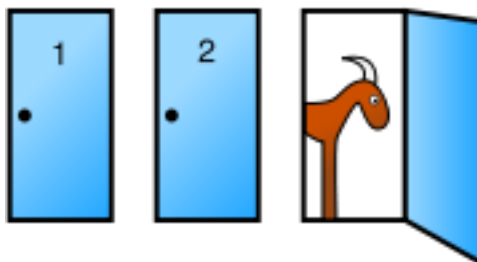
   (a) Describe the sample space for this problem and assign probabilities to each event.

   (b) If the contestant chooses door 1 and the host reveals a goat behind door 2, should the contestant switch to door 3? Are the two options equally likely to reveal the car? Why or why not?

   (c) If there were 5 doors and the host revealed 1 door, should the contestant switch to one of the remaining 3 doors? Why or why not?

   (d) If there were 5 doors and the host revealed 3 doors, should the contestant switch to the one remaining door or stick with the original choice? Why or why not?

(2) The batting statistics for two baseball players first and second halves of a season are given in the table below. Which is the better batter for the first half? The second half? The season? How do you explain this?

First Half

	Hits	At Bats	Average
Batter 1	4	10	.400
Batter 2	35	100	.350

Second Half

	Hits	At Bats	Average
Batter 1	25	100	.250
Batter 2	2	10	.200