

**McMaster University—DeGroote School of Business**

Bus O711: Operations Analysis Under Uncertainty

**Assignment #1 (Review of Probability: Ch. 24)**

Due Date: Class immediately following the completion of Review of Probability

*Late assignments will not be accepted!*

Question	1	2	3	4	5	Bonus	TOTAL
Mark	20	20	20	20	20	10	110/100

- All problems (except the last one) are from our textbook “Introduction to Operations Research,” 9th Edition, by F. S. Hillier and G. J. Lieberman, McGraw- Hill, 2009.

- **Chapter 24 will be distributed in class.**

1. Problem 24.1,
2. Problem 24.3,
3. Problem 24.4,
4. Problem 24.10,
5. Problem 24.12,
6. Bonus Problem (10 marks): Suppose you’re on a game show and you’re given the choice of three doors. Behind one door is a car; behind the others, goats. The car and the goats were placed randomly behind the doors before the show. The rules of the game show are as follows: After you have chosen a door, the door remains closed for the time being. The game show host, Monty Hall, who knows what is behind the doors, now has to open one of the two remaining doors, and the door he opens must have a goat behind it. If both remaining doors have goats behind them, he chooses one randomly. After Monty Hall opens a door with a goat, he will ask you to decide whether you want to stay with your first choice or to switch to the last remaining door. Imagine that you chose Door 1 and the host opens Door 3, which has a goat. He then asks you “Do you want to switch to Door Number 2?” Is it to your advantage to change your choice? Explain.

Hint: See <<http://www.youtube.com/watch?v=mh1c7peG1Gg>> for an explanation of this problem.