

MA 222. Assignment 1

due Tuesday Jun. 1, 2010 at the beginning of the class.

Note that due to the Memorial day and Commencement day this assignment is actually two due in the same day. So the grade for this assignment is double the regular assignments (respectively 20 points).

1. Gottfried Wilhelm Leibnitz (1646-1716), German mathematician, philosopher, statesman and one of the supreme intellects of the seventeenth century believed that in a throw of a pair of fair dice (labeled 1 to 6) the probability of obtaining the sum 11 is the same as obtaining the sum 12. Do you agree? Explain.
2. 6 faculty members in the Mathematical Sciences department have declared that their computers are no longer keeping up with the current day technology. The department gave them a choice and thus four members selected desktop computers and two requested laptop computers as replacement. However, soon after the department found out that funding is only available for two computers (regardless of type). Thus they decided to use random drawing to decide on the replacements.
 - a) The Department does not care who is going to receive the computers. It is only interested in the type of computers to be bought. List the outcomes in the sample space from the department perspective.
 - b) The faculty members on the other hand are very much interested in who will receive what. Use your own notation and write the sample space from the faculty members' perspective.
 - c) List the outcomes in the event "Both computers chosen were laptops". Use both sample spaces from a) and b)

- d) Professor Florescu is one of the members of the department who selected a replacement laptop. List all the outcomes in the event “professor Florescu will receive a replacement laptop”. Can you use both sample spaces to write this event? Why? /Why not?
- e) Calculate the probability of the event in d)

- 3. Problem 21 on page 58
- 4. Problem 31 on page 65
- 5. Problem 35 on page 66
- 6. Problem 39 on page 66