STAT/MA 41600
In-Class Problem Set #2: August 25, 2017

1. A row of 5 empty seats is available to Jack and Diane. They choose two (distinct) seats. Suppose that all such choices are equally likely.
1a. What is the probability that Jack is immediately on Diane's left?
1b. What is the probability that Jack is on Diane's left (possibly with some empty seats in between)?
1c. What is the probability that seats 2, 3, 4 are empty?
1d. What is the probability that Jack and Diane have exactly one empty seat between them?

2. A student has 4 books: Two are red, one is blue, and one is green. The student is always in a hurry, so she picks two books and puts them in her bag randomly, without looking, and without regard to order.
2a. What is the probability that she picks no red books?
2b. What is the probability that she picks exactly one red book?
2c. What is the probability that she picks two red books?

3. Roll a green 6-sided die and a red 6-sided die.
3a. What is the probability that the dice have an even sum?
3b. What is the probability that the dice have a sum of 8 or larger?
3c. What is the probability that the dice have a sum between 6 and 8 (inclusive)?

4. Consider a white 4-sided die (numbered 1, 2, 3, 4), and a black 6-sided die (1 to 6).
4a. What is the probability that the value on the black die is greater than or equal to the value on the white die?
4b. What is the probability that the value on the black die is strictly greater than the value on the white die?
4c. What is the probability that the dice have a sum between 6 and 8 (inclusive)?