3 Nov 2014
Math 181

Disjoint and Independent Events: Roll two 6-sided dice. One die has colored dots and rounded corners, the other has black dots and more pointed corners. Consider the events:

- A: the black die shows 1
- B: some die shows 1
- C: the sum is 7

- D: the sum is 8
- E: both dice show the same number
- F: colored die > black die

Answer the following questions

1. For each event, compute the probability of the event occuring.

2. Which pairs of events are disjoint?

3. Which pairs of events are independent?

Benford's Law:

In your group, roll the dodecahedron (the 12-sided die) until you get something less than 10. Write down that number, and roll again, following these rules.

- If it shows 1–9, write that down as the next digit, and roll again
- If it shows 10, write 0 as the next digit, and roll again
- If it shows 11–12, stop.

You should now have a single number with (possibly) several digits. Let this number be N. Using the table below, how many numbers between 1 and N start with each digit?

1	2	3	4	5	6	7	8	9

Permuations and Combinations:

1. Should I use permuations or combinations to determine the probability of a particular poker hand?

2. Should I use permuations or combinations to determine how many "combinations" are possible for a lock on a safe?

3. Pizza Place offers the choice of white or wheat crust. They also offer the following toppings: cheese, pepperoni, ham, mushrooms, sausage, and onions. How many different types of pizza can they claim to offer?

4. Two students are arguing during a game of poker over whether a flush (5 cards of the same suit) beats a straight (5 sequential cards). The rarer hand should be the winner. If they are using a standard deck of 52 cards, how can you determine which hand is better?

Homework: Due Wednesday, Nov 5.
Page 314: #11–14.
Page 317–218: #28–29.

I will be sending out emails about individual projects. I am still checking with my supervisor about how credit for these projects should be handled. They may be an optional assignment that can replace a low quiz score, or they may be a required assignment that will count towards part of the third midterm's grade. Either way, presentations will occur after the third exam, but you should decide on a project soon. My email will contain suggestions based on feedback you gave me earlier, but I'm open to any having the project be about something not on my list of suggestions.