Math151 at the University of Tennessee, Knoxville - Chat for November 9, 2015 with the course instructor, Louis Gross.

I will be online starting at 8:30PM and will be happy to answer questions regarding any aspect of the course, assignments, etc. You can type in this document to ask questions.

When you ask a question, please do not use your name because this document will be saved and publicly posted after we close it. I will be on-line at least until 9:30PM but will stay on longer if there are still questions. Note that I do not know the identity of anyone posting questions - each participant shows up as “Anonymous” animal.

I am online if there are any questions- Lou

Could you explain how to do exercise 10.5 and also 10.9?

This is a case in which there are only two options in each choice and we want to find how to get 3 boys in a family of five children. So this is a binomial probability in which we choose the probability of “success” (meaning having a girl) to be .5 so this is what the book calls
B[5;3] = (5! /(3! 2!) (.5^3) (.5^2) = 10/32

OK? yes that helps a lot, thank you

Now for 10.9 in part (a) we are told that there are (in a fruit fly) 4 chromosomes each of which have two possible forms. So during meiosis in creating gametes, we have 2 options for each of the 4 chromosomes so this is 2 options for the first chromosome, 2 for the second etc. so there are 2 x 2 x2 x 2 = 16 different possibilities for gametes from these 8 different (4 pairs) of chromosomes. OK? yes

For humans there are 23 different chromosomes in pairs (46 total) so similar to the above, each gamete has two options for each chromosome so there are 2^23 possibilities for gametes. Of course this completely ignores the reality that meiosis includes recombination which essentially “splits” the chromosomes at multiple locations, leading to a much higher number of potential gametes from any one individual. OK?

yes that makes sense now. Thank you. and also could you go over 10.2.

OK - rolling two dice let's assume that we know which is which so there are 36 different outcomes from tossing the two dice. Let's look at (a) so we want only cases in which the sum is odd

1st toss	1	2	3	4	5	6
2nd toss	2,4,6	1,3,5	2,4,6	1,3,5	2,4,6	1,3,5

so we see that there are 18 different options which gives a sum which is odd so the probability the sum is odd is 18/36 = ½ which should make perfect sense since the sum could be odd or even and they are equally likely.

For the other parts of 10.2 you do it similarly - you count up how many options are possible for each case. Do you want me to do another part or do you want to try them?

I think I understand them now and will be able to do them. Thank you so much for your help. Which chapters are going to be on Exam 3? 11,12 and 13?

It is chapters 10-13.

Okay Thank you!

I am going off line now - good night.