**Discrete Probability Problem Set**

**Please work all problems, showing work and answers. I suggest photocopying your worksheet before handing it in , so that you will be able to follow our discussions without trying to remember what you wrote.**

1. The probability that any individual passes a course is 0.85. In a course with 11 students, let X represent the number who pass. Please compute, and round to three decimals,
2. P(X>1) b. P(X < 9) c. P(X=0)
3. The probability that any job applicant is granted an interview, after submitting a resume, is 0.30. If there are 450 applicants, please compute
4. P(X < 140) b. P(X > 120)
5. After taking a certain drug, the probability of improvement is 0.75; of no change, 0.20; of deterioration, 0.05. Among 10 patients who were given the drug, please compute
6. The probability that no patient experienced a change
7. The probability that everyone deteriorated
8. The probability that half improved and half had no change.
9. Suppose your professor needs a little prodding to respond to emails. The probability that she will respond to any given email is 0.85. What is the probability that the first email she responds to is the third one you send?
10. A textbook has an average of 3 typos per chapter. What is the probability that a given chapter has at least one typo? At most two typos?
11. Your puppy either stares at you adoringly (0.80) or is trying to get you to play (0.20). If she is staring adoringly, she is either in your lap (0.55) or not; and if she is trying to get you to play, she also is either in your lap (0.25) or not.
12. What is the probability that your puppy is in your lap?
13. What is the probability that your puppy is trying to get you to play, given that she is not in your lap?
14. Toss two dice. What is the probability of getting
15. Both faces odd
16. Sum of faces less than 5
17. Sum of faces greater than or equal to 9