Math 447 - Probability Theory - Section 1 - Michael Fochler

Fall 2024, Final Exam – A, Dec 12, 2024   NAME: _____

This exam is worth total of | **300 points** | SIGNATURE: _____

Instructions
- Turn off all electronic devices including, but not limited to, cell phones, tablet, laptops, ...
- Calculators are not allowed.
- **Enter your name NOW!**
- Use a pencil at your own peril: Whatever I cannot read with my not so good eyesight I must ignore when grading. Of course, there are no such issues with your scratch work.
- Show all your work unless you are only asked to fill in place holders, e.g., check off selections or enter numbers. Exceptions to this rule will be indicated where they occur.
- Unless you are instructed otherwise (e.g., problem #4(b)), there is no need to simplify numerical quantities like $4(2.8)\frac{2+9/4}{\frac{3}{5}-\frac{59}{160}}$ or to reduce fractions like $3/12$ to lowest terms. There is also no need to simplify factorials such as 5! or binomial coefficients such as $\binom{8}{6}$.
- But **you are expected** to evaluate integrals and infinite sums unless instructed otherwise.
- Circle or | box | the result if it is not a fill in the blanks answer.
- Use the empty back pages for scratch and **if you run out of space** for the solutions. Unless you explicitly write a remark such as "**continued on the back**", I will assume that a back page only contains scratch work and not grade what you wrote there!
- Read all problems very carefully. If you have any questions, raise your hand. Wave your hand to get my attention if I look in your direction and ignore you.
- I will understand what you mean by $n, p, q, p(y)$ But if you write, e.g., $P(A)$ and that becomes part of your solution without indicating the meaning of A and your result is wrong, how do you expect me to give you partial credit?
- For your insurance, it cannot hurt if you write some shorthand like, e.g., $Y = \#$ of seniors $\Rightarrow Y$ is binom$(25, \frac{2}{7} + \frac{1}{5}) \Rightarrow P(7 \leq Y \leq 9) = ...$ It might help to get some partial credit.
- This test has **11** problems on pages **2–10** and is worth **300** points. It is your responsibility to make sure that you have all of the pages!
- Do not return the formula sheet with your exam.
- Good Luck!

DO NOT TURN THIS PAGE UNTIL TOLD TO DO SO.

Problem	1	2	3	4	5	6	7	8	9	10	11	Total
Points Earned												
Out of	25	25	30	15	25	30	50	25	25	25	25	300