HOMEWORK 9: MATH 3215-C (PROBABILITY AND STATISTICS)

DUE WEDNESDAY, NOVEMBER 4TH, 8 P.M. ATL

- All problems are worth 2.5 points (20 total) and you can get a partial point.
- **If you use any help from anyone or from anywhere, mention it in your work.**
- To get full credit you need to submit full answers.

Problem 1. *Let X be uniformly distributed on $[-\frac{1}{2}, \frac{1}{2}]$. Let*

$$u(x) = \begin{cases} 1 & x \geq 0 \\ 0 & x < 0 \end{cases}, \quad v(x) = \begin{cases} 0 & x \geq 0 \\ 1 & x < 0 \end{cases}.$$

Put $Y_1 = u(X)$ and $Y_2 = v(X)$.
(a) Are Y_1, Y_2 equal?
(b) Do they have the same distribution (cdf)?

Problem 2. *Do problem 4.5-5.*

Problem 3. *Do problem 5.3-2.*

Problem 4. *Do problem 5.3-4.*

Problem 5. *Do problem 5.3-14.*

Problem 6. *Do problem 5.3-16.*

Problem 7. *Do problem 5.6-6.*

Problem 8. *Do problem 5.6-14.*