Lecture 17: Sept 30

Last time

- Exam 1 covers up to next Monday's lecture
- Expectations (2.2)
- Moments and moment generation function

Today

- Practice examples

Example A random variable X has a discrete uniform $(1, N)$ distribution, $X \sim Unif\{1, N\}$, if

$$\Pr(X = x|N) = \frac{1}{N}, \quad x = 1, 2, \ldots, N,$$

where N is a specified integer. This distribution puts equal mass on each of the outcomes $1, 2, \ldots, N$. Question: what is the cdf of this r.v.?
Solutions:

Example The continuous uniform distribution is defined by spreading mass uniformly over an interval $[a, b]$. A random variable X has a continuous uniform $[a, b]$ distribution, $X \sim Unif(a, b)$, if its pdf is given by

$$f(x|a, b) = \begin{cases} \frac{1}{b-a} & \text{if } x \in [a, b] \\ 0 & otherwise. \end{cases}$$

Question: what is the cdf?
Solutions: