CPSC 664, Spring 2023 Scribe: YOUR NAME HERE
LECTURE DATE HERE Lecturer: Tim Kunisky

LECTURE #: TITLE HERE

1 Section 1

This is text. This is an equation:

$$A = B. \tag{1}$$

Theorem 1.1 (Theorem 1)**.** *This is a claim.*

This is a reference to the claim in Theorem 1.1. This is a longer paragraph elaborating on my Theorem. This is another sentence.

Remark 1.2 (Topic)**.** *This is a remark on my theorem.*

2 Section 2

Here is a demonstration of some useful probability notations:

$$\begin{aligned}\mathop{\mathbb{E}}_{\text{subscript}}[Z] &= \mathbb{E}\left[\sum_{i=1}^{N} \mathbb{1}\{A_i\}\right] \\ &= \sum_{i=1}^{N} \mathbb{P}[A_i] \end{aligned} \tag{2}$$

Some more:

$$\mathbb{E}Z^2 - (\mathbb{E}Z)^2 = \mathsf{Var}[Z] = \boldsymbol{x}^\top \mathsf{Cov}[\boldsymbol{y}]\boldsymbol{x} \tag{3}$$

And linear algebra notations:

$$\boldsymbol{A}\boldsymbol{1} = \boldsymbol{X}^\top \boldsymbol{y} = \langle \boldsymbol{a}, \boldsymbol{b} \rangle \boldsymbol{z} \text{ for } \boldsymbol{Y} \succeq \boldsymbol{0} \tag{4}$$

Some functions:

$$f : \mathcal{A} \to \mathbb{C} \tag{5}$$

$$x \mapsto f(x) \tag{6}$$

Some optimization:

$$x = \left\{ \begin{array}{ll} \text{maximize} & f(\boldsymbol{y}) \\ \text{subject to} & \text{conditions on } \boldsymbol{y} \end{array} \right\} = \mathop{\mathsf{arg\,min}}_{x \in \mathcal{X}} \{\mathsf{obj}(x)\}. \tag{7}$$