

## CSE 107

### Suggested Discussion Problems for Midterm Exam 1

All problems are from *Introduction to Probability* (2<sup>nd</sup> edition) by Bertsekas and Tsitsiklis. Solutions can be found at <https://people.ucsc.edu/~ptantalo/cse107/Fall25/Handouts/text-solns.pdf>, or in the text itself.

#### Section 1.2: Probabilistic Models

Problems: 5, 6, 8

#### Section 1.3: Conditional Probability

Problems: 14, 16, 17

#### Section 1.4: Total Probability Theorem and Bayes' Rule

Problems: 21, 27

#### Section 1.5: Independence

Problems: 31, 33, 34

#### Section 1.6: Counting

Problems: 53, 55

#### Section 2.2: Probability mass functions

Problems: 1, 6, 7

#### Section 2.3: Functions of a random variable

Problems: 13, 14, 15

#### Section 2.4: Expectation, mean and variance

Problems: 16, 18, 20, 22, 23ab

#### Section 2.5: Joint PMFs of multiple random variables

Problems: 24, 25, 26ab

#### Section 2.6: Conditioning

Problems: 31

#### Section 2.7: Independence

Problems: 39, 40