

# MATH 1150H: Exam Review

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## 1 Concepts to Review

- Sample Spaces, Basic Probability Calculations and Probability Functions, Tree Diagrams.
- Permutations and Combinations
- Discrete and Conditional Probability
- Probability Density Functions (Validity, Computing Probabilities, Creating Them)
- Expected Values and Variance
- Probability Distributions
- Independence
- Chebyshev's Inequality, Markov's Inequality, Using the Standard Normal Table

## 2 Practice Questions

### 2.1 Textbook Questions

- Chapter 1: **1.1:** 1, 3. **1.2:** 1, 2, 9, 11, 15.
- Chapter 2: **2.2:** 1.
- Chapter 3: **3.1:** 1-7 **3.2:** 1-6, 10, 12, 19, 20.
- Chapter 4: **4.1:** 2-5, 6, 9, 19, 28, 35, 36, 46. **4.2:** 4.
- Chapter 5 and 6: **5.2:** 16. **6.1:** 1-4, 36.

### 2.2 Online Questions

- All of these can be found on <http://euclid.trentu.ca/math/sb/1150H/welcome.html>
- Review **Winter 2018:** Both Tests, Assignments 1-8, 9-11 if time.
- **All Final Exams:** Summer '17, '16, '15, Winter '17,
- Solutions to Quizzes over the years.
- Test Solutions over the years.

### 3 Likely to Appear on the Exam...

- Here's an experiment, find the : Probability function, tree diagram, sample space.
- Expected Value and Variance: In multiple forms. Know how to compute these, in integral, summation and chart form. Know how to compute them from an experiment.
- Probability Density Functions: Is it valid? Find probabilities from it (continuous and discrete),  $E(X)$  and  $V(X)$
- A Perm/Combo problems, conditional probability or finding probabilities of experiment's that could be formatted as (but not limited to): Flipping coins, rolling dice, drawing cards, picking marbles from a bag, etc.
- Expected Value and Variance given, find the Continuous/ discrete Probability using the standard normal table (Z-Score equation!!) and Chebyshev's Inequality.
- Write a poem.

### 4 What to Put on a Cheat Sheet

- **Be Smart with your space:** If you know how to do something thoroughly, save space and keep it off your cheat sheet!
- Write small enough to fit stuff, but big enough to see. It has to be LEGIBLE for the exam, remember?
- **INCLUDE EXAMPLES**
- Section your equations/definition by topic, colour code.
- Use all of the space you can
- Make a list of all the things you should include and cross them off as you add them. Helps you focus and makes you feel like you're making progress.
- You don't need to include a std. norm. chart. Stefan gives you one/ you can bring a separate one.
- **TAKE YOUR TIME. DO NOT WRITE THIS THE DAY OF THE EXAM.** Writing it will help you study, and you can use it to just review on the day of.