

Mathematics 1550H – Probability I: Introduction to Probability

TRENT UNIVERSITY, Summer 2023 (S62)

Quiz #6

Expected Values

Due just before midnight on Tuesday, 11 July.*

Instructions: Do both of the following problems. Please show all your work.

1. A fair coin is tossed 5 times and the random variable X counts the number of heads that come in the 5 tosses. Use the definition of expected value for discrete random variables to compute the expected value of X . [3]
2. The continuous random variable T has $f(t) = \begin{cases} 2/t^3 & t \geq 1 \\ 0 & t < 1 \end{cases}$ as its probability density function. Use the definition of expected value for continuous random variables to compute the expected value of T . [2]

* You should submit your solutions via Blackboard's Assignments module, preferably as a single pdf. If this fails, you may submit your work to the instructor on paper or by email to sbilaniuk@trentu.ca.