FALL 2024 STA237H1F MIDTERM (Oct 18, 2024)



Statistical Sciences
UNIVERSITY OF TORONTO

Question 1

Suppose there are **50** students enrolled in one of the STA237H1 tutorial sections and that there is a **2%** chance a randomly selected student in this tutorial section arrives late to a tutorial quiz. For the purposes of this question, assume that no students travel to the tutorial quiz together, there are no travel delays on the tutorial quiz day (e.g., detours, public transit disruptions, etc.), and one student's arrival time is not associated with other students' arrival times.

(a) We are interested in the number of students enrolled in this tutorial section who will arrive late to their next tutorial quiz. Is the binomial distribution an appropriate model in this situation? Assess the necessary conditions. If it is appropriate, report the parameter(s). If it is not appropriate, identify the appropriate distribution (and its parameter(s)).