

Mathematics 1550H – Probability I: Introduction to Probability

TRENT UNIVERSITY, Summer 2023 (S62)

Assignment #3

Switcheroo!

Due just before midnight on Friday, 7 July.*

1. Playing a game at a carnival, you are asked to choose one of five boxes, which are identical in appearance. Two of the boxes contains a prize and the other three are empty. Once you select a box, the carnie running the game opens one of the other boxes, shows you that it is empty, and gives you the chance to change your mind, *i.e.* to pick an unopened box other than the one you selected first. Will changing your selection improve your chances of winning or not? Give a complete explanation! [10]

NOTE: This puzzle is a somewhat souped-up variation of the Monty Hall Problem, which you should feel free to look up.

* 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.