

## Mathematics 1550H – Probability I: Introduction to Probability

TRENT UNIVERSITY, Summer 2020 (S62)

### Quiz #2

*Tuesday, 30 June.*

*Available on Blackboard from 12:01 a.m. on Tuesday, 30 June.*

*Due on Blackboard by 11:59 p.m. on Tuesday, 30 June.*

*Solutions will be posted on Thursday, 2 July.*

*Scans of photos of handwritten work are entirely acceptable so long as they are legible and in some common format; solutions submitted as a single pdf are preferred, if you can manage it. If you can't submit your solutions via Blackboard's Assignments module for some reason, please email them to the instructor at: [sbilaniuk@trentu.ca](mailto:sbilaniuk@trentu.ca)*

**Reminder:** *Per the course outline, all work submitted for credit must be written up entirely by yourself, giving due credit to all relevant sources of help and information. For the quizzes, you are permitted to use your textbook and all other course material, but you may not use any other sources or aids, nor give or receive any help, except to ask the instructor to clarify questions and to use a calculator (any that you like).*

Consider the following experiment:

Toss a fair coin twice. If a head comes up on one or both tosses, the experiment ends. Otherwise, proceed to:

Roll a fair standard six-sided die. If it comes up with 2, 3, 4, or 5, the experiment ends. Otherwise, proceed to:

Toss a fair coin twice. Whatever comes up on the two tosses the experiment ends.

The *score* of the experiment is the number of heads that came up in the course of the experiment plus the number on the die roll, if one occurred.

1. Draw the complete tree diagram for this experiment. *[2]*
2. What is the probability that every coin toss in the experiment came up the same way? *[0.5]*
3. What is the probability that the score of the experiment is 3? *[0.5]*
4. What is the probability that the score of the experiment is an even number? *[2]*

*Enjoy Canada Day!*