

Mathematics 1110H – Calculus I: Limits, Derivatives, and Integrals

TRENT UNIVERSITY, Fall 2025

Assignment $\#\pi + e$

A Change of Pace: An Application of Abstract Mathematics

*Due on Friday, 5 December.**

Please read *A Contribution to the Mathematical Theory of Big Game Hunting*, by H. Pétard[†], which appeared in *The American Mathematical Monthly*, Vol. 45, No. 7 (Aug. – Sep., 1938), pp. 446–447. It should be available in electronic form from the JSTOR archive via Bata Library. Among many other places, this article can also be found at:

<https://gwern.net/doc/math/humor/lion-hunting/1938-petard.pdf>

1. Devise at least three new and original ways to (ab)use mathematics to capture a lion in the Sahara desert. [10]

Bonus. Pick any one of $\pi + e$, $\pi - e$, $\pi \cdot e$, and $\frac{\pi}{e}$ and determine, with a complete proof, whether it rational or irrational.

[Success = 100% on the final mark in MATH 1110H]

* You should submit your solutions via Blackboard's Assignments module, preferably as a single pdf. If submission via Blackboard fails, please submit your work to your instructor by email or on paper as soon as you can. You may work together, look things up, and use whatever tools you like, so long as you write up your submission by yourself and give due credit to your collaborators and any sources and tools you actually used.

[†] This is apparently a pseudonym of Ralph Boas.