

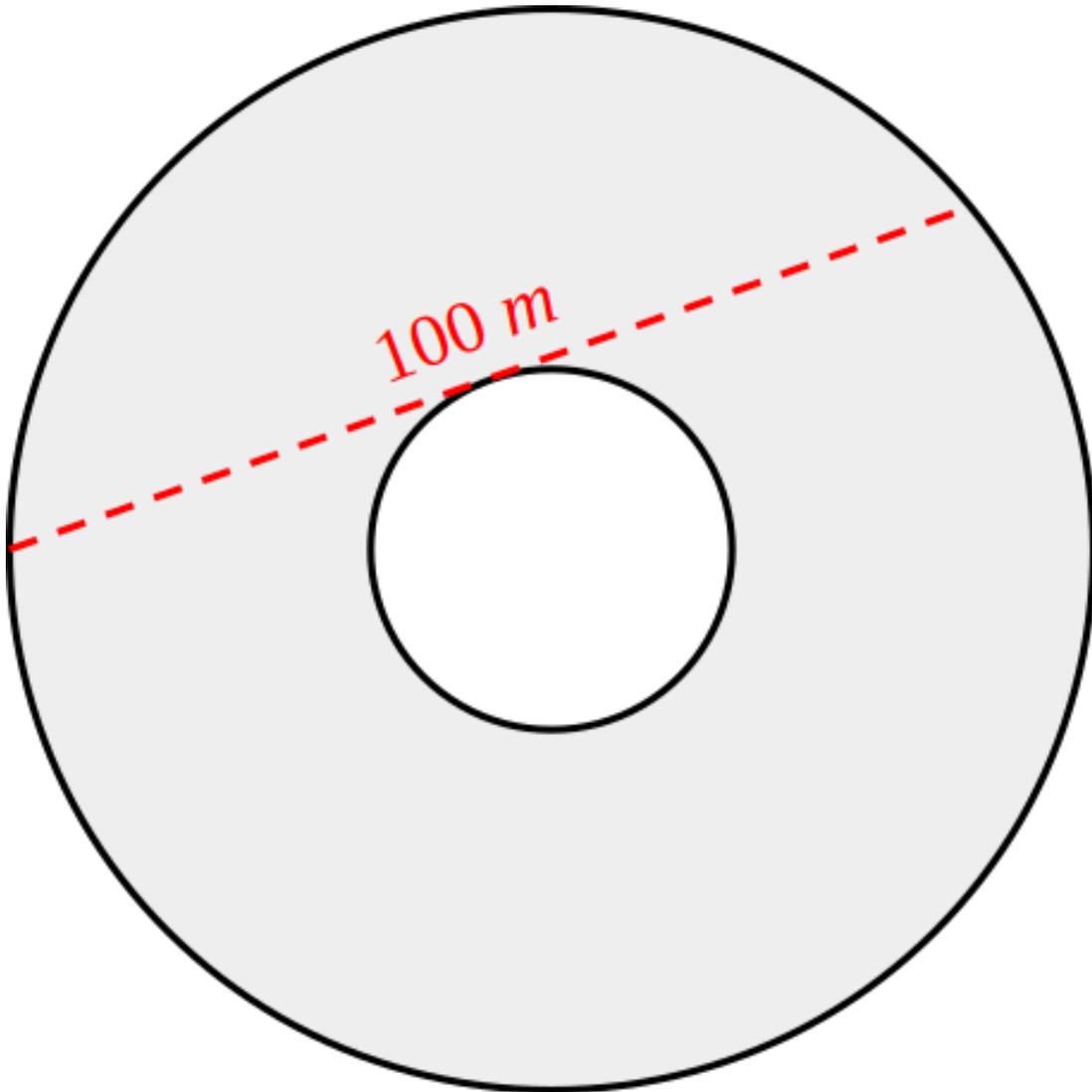
Mathematics 1110H – Calculus I: Limits, Derivatives, and Integrals

TRENT UNIVERSITY, Summer 2025 (S62)

Quiz #0 – Around and Around We Go

*Due on Tuesday, 17 June.**

1. The paved portion of a racetrack has the shape of an annulus, a region between two circles that have a common centre. The longest possible straight line that fits entirely into this paved portion is 100 m long. Find the area of the paved portion of the racetrack and explain your reasoning as completely as you can. [5]



Hint: A line tangent to a circle at a given point is perpendicular to the radius of the circle at that point.

* 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. You may work together and look things up, so long as you write up your submission by yourself and give due credit to your collaborators and any sources you actually used.