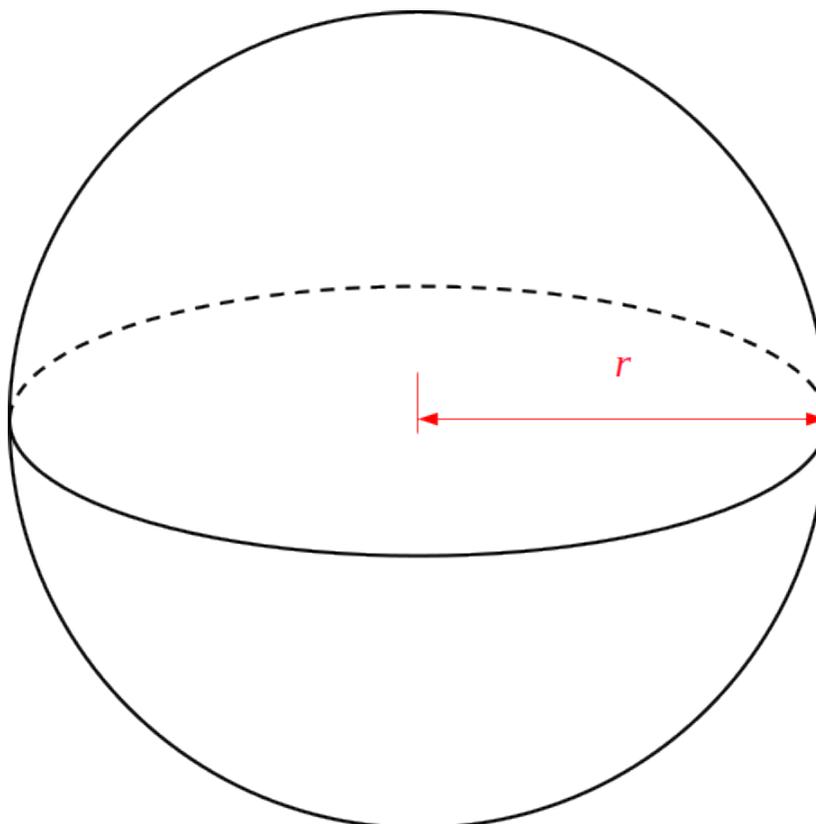


Mathematics 1110H (Section A) – Calculus I: Limits, Derivatives, and Integrals
TRENT UNIVERSITY, Fall 2024

Quiz #8

Inflation

Wednesday, 13 November.*



Note that a sphere of radius r has volume $V = \frac{4\pi r^3}{3}$ and surface area $A = 4\pi r^2$.

1. A spherical balloon is being inflated at a constant rate of $36\pi \text{ cm}^3/\text{s}$. How is the surface area of the balloon changing at the instant that the radius of the balloon is 3 cm ? [5]

* Please submit your solutions, preferably as a single pdf, via Blackboard's Assignments module before midnight. If that fails, please submit them to the instructor on paper or via email to sbilaniuk@trentu.ca as soon as you can.