

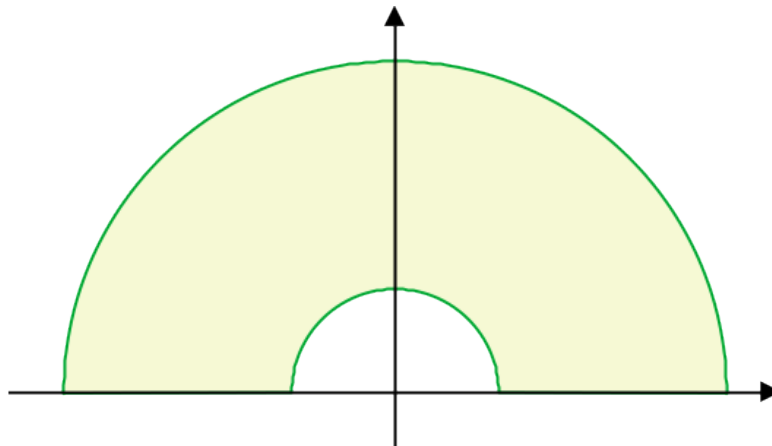
Mathematics 1120H – Calculus II: Integrals and Series

TRENT UNIVERSITY, Winter 2024

Assignment #6

A Centroid

Due* just before midnight on Friday, 1 March.



1. Find the centroid of the region $S = \{ (x, y) \mid 1 \leq x^2 + y^2 \leq 9 \text{ and } y \geq 0 \}$. [10]

Ode to a ϕ ?

A thing as lovely as a ϕ

I think that I shall never $\left\{ \begin{array}{l} \text{see} \\ \text{spy} \end{array} \right\}$. [Choose one.]

If you want to make ϕ rhyme with “see”,

But you’re really determined to be

Consistent, admit

Though it doesn’t quite fit,

That a disk measures r^2 times “pea”.

Each of ξ , π , ϕ , χ , ψ will claim

An identical rhyme for its name.

Before you get hot,

Check Liddell and Scott[†];

Give them, not the author, the blame.

By Barry W. Brunson, *American Mathematical Monthly* **92** (1985).

* 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.

[†] A *Greek-English Lexicon*, compiled by H.G. Liddell & R. Scott, Oxford at the Clarendon Press, 1968 (1st edition 1843); widely recognized as authoritative. In the United States, most mathematicians seem to pronounce ϕ as “fee” rather than “fie”. Liddell was the father of Alice Liddell, for whom Lewis Carroll wrote *Alice’s Adventures in Wonderland* and *Through the Looking-Glass*.