

# Lab 03

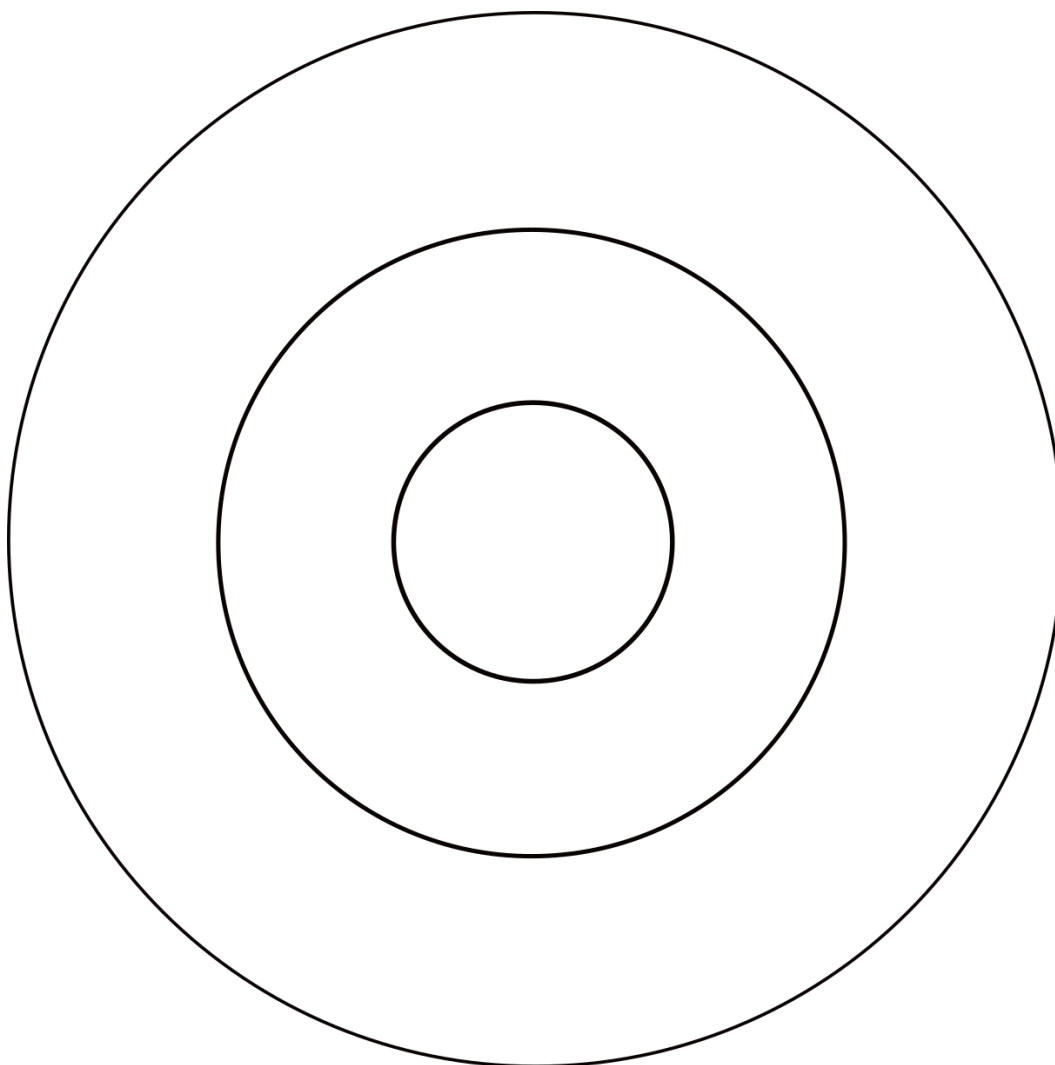
## Calculus I

26 September 2022, College of the Atlantic

- Please work in groups of two or three
- Please write your answers on this sheet, make a scan of it as a pdf, and upload it google classroom at the end of lab. Use “genius scan” or some similar scanning app. This assignment is not graded.

Names: \_\_\_\_\_

### Part I: Slices of Pie



1. For each slice and sub-slice, measure the length of the edge of the slice and the length of the crust.
2. Calculate the ratio of the crust length to the side length (i.e. crust length divided by side length?) for each slice.
3. What is the meaning of this number?

## Part II: Some Graphing Puzzles

Make rough sketches of the following functions. Check your graphs using wolframalpha or desmos, but be sure to try them without a computer first. These aren't easy.

1.  $2^{\sin(x)}$
2.  $\sin(2^x)$
3.  $(\sin(x))^2$
4.  $\sin(x^2)$
5.  $x^2 \sin(x)$

## Part III: Field Guide Work

- Target date for field guide completion: **Friday, October 7.**
- At this point you're in a position to make the field guide for linear, exponential, power, log, and trig functions. Be sure to discuss how to distinguish between functions that look similar.
- We'll talk about polynomials in class Thursday, and then that will be it for functions.
- For each type of function, include one or two scientific uses for that function. I.e., an equation from physics, chemistry, biology, etc., that's an exponential, a power function, and so on.
- Spend a chunk of time working today, and also aim to spend around an hour outside of class this week working on the field guide.

A few questions:

1. How is your field guide going? Do you have any questions or concerns?
2. Do you need any more supplies?