

# MA 109: October 19

Exponential Functions: Equations and Graphs

## Start of Class

### Instructor Information

Name:

Email:

Office Hours:

## Warm-up Questions

## Notes

**Example:** Find the initial value and the growth/decay rate of the exponential function  $f(x) = 1.2(2.7)^x$ .

**Example:** Write the equation of the exponential function with initial value 6 and goes through the point  $\left(-2, \frac{3}{2}\right)$ .

Example: The population of four towns are modeled by the equations to the right.

1. Which town has the largest initial population?

Town	Population
Town A	$f(x) = 356(1.92)^x$
Town B	$f(x) = 673(0.34)^x$
Town C	$f(x) = 93(1.03)^x$
Town D	$f(x) = 854(1.52)^x$

2. Which towns are growing?

3. Which town is growing the fastest?

## End Behavior of Exponential Functions

**Example:** Determine the end behavior of  $f(x) = 2(1.03)^{x-2} + 7$ .

## End of Class

Write a summary of what you learned today:

What questions do you have about the material from today?

What do you need to do between now and the next class meeting?