MA 135: College Algebra (Fall 2016)
Instructor: Justin Ryan
Week 12 Notes

How to use this handout—This handout contains a skeleton of the notes that we will study in class this week. I've typed out definitions and theorems so that you don't have to exasperatedly copy what I'm writing, and populated these pages with a number of examples. My expectation of you is that you will fill in all of the details, ideas, *etc*, that I've left out.
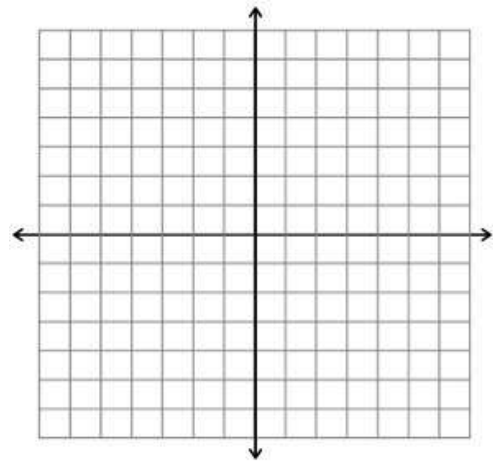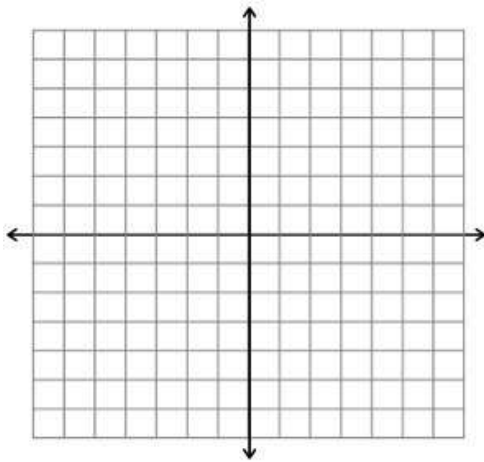
Section 5.2—Exponential Functions

1. Definition

2. Examples $f(x) = 2^x$ and $f(x) = \left(\frac{1}{2}\right)^x$.
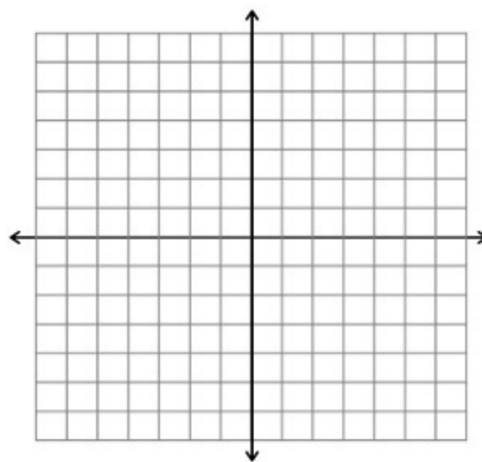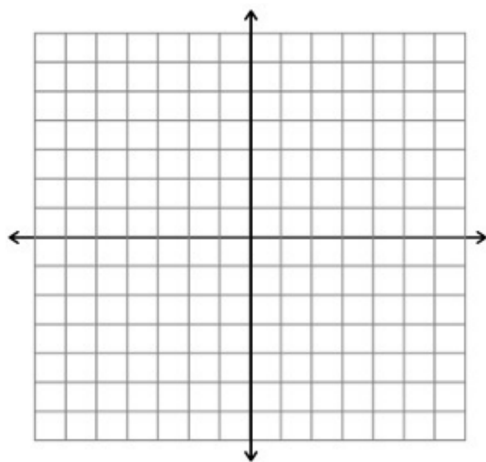
3. General Shape

4. Example Compound Interest

5. Example Find the value of $4000 invested for 2 years at 12% compounded quarterly.

6. Present Value

7. Example   Find the present value of $5000 to be paid 8 years from now at 10% interest compounded semiannually.

8. Example   Compounding Continuously

9. The Natural Number, e

10. The function $y = e^x$

11. Continuously compounded interest

12. Example Find the value of $1000 at 8% interest compounded continuously for 20 years.

13. Present Value

Section 5.3—Logarithmic Functions

14. Exponential Equations The one-to-one property.

(*a.*) Solve for x: $2^x = 32$

(*b.*) Solve for x: $9^{x+2} = 3^x$