Math 112 – College Algebra (Section 21 – Yousuf)

To-Do List: Seven Days until Exam 3

The following list has 7 items. <mark>Do one item each day until Wednesday, April 30th, **4 PM**.</mark>

Each item has a submission deadline on Gradescope.

Want a study-guide? You already have it! The objectives before each chapter list what you need to know for the exams!

<mark>**Item 1 (Due April 24): Reviewing Class Notes and Objectives**</mark>

Rational Functions

1. What is the **general form** of a rational function?
2. What is the **domain and range** of a rational function?
3. Where do the **intercepts** occur?
4. When do the **vertical asymptotes** occur?
5. Write all three conditions of when the **horizontal asymptotes** occur:
6. What is the **long-term behavior** of a rational function?

Exponential Functions

1. What is the **general form** of an exponential function?
2. How does a **graph of an exponential** look like?
3. What is the **domain and range** of an exponential function?
4. Where do the **intercepts** occur?
5. Where do the **asymptotes** occur?
6. Write down the periodic/discrete compound interest formula:
7. Write down the continuous compound interest formula:
8. Demonstrate if $r > 0$, $r < 0$, $b > 1$, b<1 in the following growth/decay chart:

Formula	Growth	Decay
Pe^{rt} (or Ce^{kt})		
$C \cdot b^x$		
$C \cdot (1+r)^x$ (note b=1+r)		

Log Functions

1. **What is a log** function? What is an **exponential equivalent of a log** function?
2. What is a **common log** function? What is a **natural log** function?
3. What is the **domain and range** of a log function?
4. What does a **graph of a logarithm** look like?
5. What is the **change of base** formula?

Properties of Logarithms

1. Write the **product property**:
2. Write the **quotient property**:
3. Write the **power property**:
4. How does the **log of an exponential** look like?
5. How does the **exponential of a log** look like?
6. Write the steps of **combining log terms into a single log term**:
7. Write the steps of **expanding a single log as much as possible**:

Exponential and Log Equations and Applications

1. General **strategy for solving exponential equations**:
2. General **strategy for solving log equations**:
3. How (and why) do you check the **solutions to a logarithm equation**?

Item 3 (Due April 26th): Practice Set 1

1. Do the entire problem set, check your answers.
2. Mark the questions you got wrong and make a note of the mistake you made.
3. Make a list of the questions you don't understand:

Item 4 (Due April 27th): Practice Set 2

1. Do the entire problem set, check your answers.
2. Mark the questions you got wrong and make a note of the mistake you made.
3. Make a list of the questions you don't understand:

Item 5 (Due April 28th): Practice Set 3

1. Do the entire problem set, check your answers.
2. Mark the questions you got wrong and make a note of the mistake you made.
3. Make a list of the questions you don't understand:

Item 6 (Due April 29th): Practice Set 4

1. Do the entire problem set, check your answers.
2. Mark the questions you got wrong and make a note of the mistake you made.
3. Make a list of the questions you don't understand:

Item 7 (Due April 30th): Review the Mistakes

If you have genuinely followed the list until here, congratulations! You are already well-prepared for the exam. Now:

1. Go over the questions you got wrong from each practice set
2. Bring questions to class (on April 30th) for your instructor from the practice sets.

Note for the Final Exam (Monday, May 12th, 2025 @ 8:00am – 10:00am):

1. Make sure to collect your Exam 1-3 copies from your instructor if you don't already have them!
2. Make sure to go over all the previous exams (you have access to the answers on Gradescope).
3. Make sure you understand why you got the problems wrong, and don't repeat the mistakes!
4. If you have time, go over the practice sets (especially for Exam 1 and Exam 2 because it has been a while, and you would need to jog your memory).
5. Congratulations on finishing Spring 2025!