

Math 105 Topics for Test 3

Next to each topic are problems from the **Chapter 2 Test on page 237**, **Chapter 3 Test on page 319**, and **Chapter 4 Test on page 385** of the Textbook. Also study the homework problems. A complete list of the homework problems is on the course webpage.

- Modeling with functions (**Ch 2 Test: 8**)
 - Write the equation to model a problem and find the maximum or minimum.
- Combining functions $f + g$, $f - g$, $f \cdot g$, $\frac{f}{g}$, $f \circ g$ (**Ch 2 Test: 9a-d**)
 - Find values
 - Find an expression for the function
 - Determine the domain and range of the function
- One-to-one functions and their inverses (**Ch 2 Test: 10, 11 a,b**)
 - Find the inverse of a given function
 - Find the domain and range of the inverse function
 - Graph the inverse of a function
- Polynomial Functions (**Ch 3 Test: 1**)
 - Find the zeros
 - Determine the end behavior
 - Make a table of values and sketch the graph
- Rational Functions (**Ch 3 Test: 9a, c, d**)
 - Find the Domain
 - Find the vertical asymptotes (if any exist)
 - Find the x-intercepts and y-intercepts (if any exist)
 - Determine the end behavior and find any horizontal asymptotes
 - Examine the sign of the function near the vertical asymptotes
 - Sketch the graph
- Exponential and Log functions
 - Graph an exponential or log function (**Ch 4 Test: 1, 2**)
 - Evaluate log expressions (**Ch 4 Test: 3**)
 - Use the laws of Logarithms (**Ch 4 Test: 4, 5**)