

Semester 1 Final Exam Topics

***45 Questions:** 5 Show your work (20 points), 40 Multiple Choice (6 with calculator, 34 w/out) = **60 Pts Total**

*NO notecard or cheat sheet

*The starred topics require a calculator.

Chapter 1: Graphs

Solving Radical Equations
Interval Notation
Solving Inequalities
Number line Method
Union and Intersection
Lines: Point Slope

Chapter 2: Functions

Domain and Range
Increasing/Decreasing
Maximum/Minimum
Even/Odd/Neither
Greatest Integer Function
Piecewise
Transformations
Compositions
*Application/Word Problems

Chapter 3 & 4.4: Rational Functions

End behavior (Limits to Infinity)
Multiplicity
Write equations of Polynomials
Roots
Y-Intercepts
Horizontal Asymptotes
Vertical Asymptotes
Oblique Asymptotes (SLASY)
Removable Discontinuity (holes)
Crossing oblique Asymptotes
Rational Function Inequalities

Chapter 14: Limits

Limits to a constant
Graph, Tables, Equations
Indeterminant Form
Algebraic Techniques (Rationalize, factor, etc.)
Left – Hand Limit
Right – Hand Limit
Continuity
Slope of Tangent Line
Derivative
Instantaneous Rate of Change

Chapter 5: Exponential and Logarithmic Functions

Inverse Functions
Exponential Functions
Domain and range of logs and exponentials
Graphs of Exponentials
Converting between forms
Properties of Logs
Solving Exponential Functions
Solving Logarithmic Functions
*Compound Interest
*Half Life
*Newton’s Law of Cooling
*Growth and Decay
*Logistics
*Regressions

Chapter 12: Sequences and Series

Arithmetic
Geometric
Sum Formulas
*Series Exploration
*Error

Optional Review problems from the book

Chapter 1 review: 21, 24, 31, 47, 55, 63, 67, 73, 75

Chapter 2 p 135, 17 p 146, 56 p154, 1
review: 6, 13, 15, 41, 63

Chapter 14 review: 11,13,14,17, 24-28, 37-43

Chapter 12 review: 1 – 41 odd

Chapter 3 review: 10, 11, 29a-c, 37, 41 ,43,47

Chapter 4 review: 57, 61

Chapter 5 review: 7, 17, 23, 25, 38, 42, 43, 53, 57, 59