Math 108 Midterm 1 Study Guide

Things you should know

1.1

1. Set Notation
2. What the union and intersection of two sets is, along with the symbols
3. The properties of Real Numbers
4. The properties of Negatives
5. The properties of Fractions
6. Intervals and interval notation
7. How to graph on a number line

1.2

8. Laws of Exponents
9. Scientific Notation
10. The relationship between exponents and radicals
11. Root notation and the properties of roots
12. How to rationalize a denominator

1.3

13. What a polynomial is and it's parts
    - Terms, coefficients, exponents
14. How to add/subtract/multiply/divide a polynomial
15. The special product formulas, 2nd degree and 3rd degree
16. How to factor a trinomial

1.4

17. What a rational expression is
18. What the domain of a rational expression is
19. How to add/subtract/multiply/divide rational expressions
20. How to rationalize the denominator or numerator

1.5

21. How to solve a linear equation
22. How to solve two linear equations in two unknowns
23. How to solve a quadratic equation by
    - A) Factoring using reverse FOIL
    - B) Using the quadratic formula
    - C) How to complete the square
24. How to solve a higher degree equation using grouping
25. How to solve equations with fractional expressions
26. How to solve equations with radicals
27. How to solve equations with fractional exponents
28. How to solve equations with absolute values

1.6

29. What an imaginary number is
30. What a complex number is
31. How to add/subtract/multiply/divide complex numbers
32. How to find complex roots of an equation

1.8
33. How to solve linear inequalities
34. How to solve quadratic and higher power inequalities
35. How to solve an inequality with absolute values

1.9
36. How to plot points on a coordinate plane
37. The equation of a circle and how to graph a circle
38. The distance formula in 2 dimensions
39. The midpoint formula in 2 dimensions
40. How to graph a line
41. How to graph an absolute value equation
42. How to graph a quadratic (Parabola) equation
43. How to find the intercepts on a graph
44. How to test an equation for symmetry

1.10
45. The slope and y-intercept of a line
46. The slope intercept equation of a line
47. The equations of vertical and horizontal lines
48. How to graph a line from a linear equation
49. How to find the equation of a line that goes through two points
50. How to find the equation of a line parallel or perpendicular to another line through a point

2.1
51. What a function is
52. What the domain and range of a function is
53. Different ways to represent a function

2.2
54. How to graph a function
55. The vertical line test
56. What piecewise function is

2.3
57. How to find the domain and range of a function from its graph
58. What an increasing or decreasing interval on a function is
59. What an increasing or decreasing function is.
60. What a local maximum or minimum of a function is

2.4
61. What the average rate of change of a function is