MA 100 FINAL REVIEW

These are some topics that are likely to appear on the final exam. Please double check the formulas and learn what they're for before using them.

- **Simplify Expressions**
  - Basic Rules of Algebra, pp. A5-A7
  - Complex Numbers, pp. 143-146
  - Exponents and Radicals, Section A.2 (Skip rationalizing numerators.)
  - *The FOIL Method, p. A24
  - *Rational Expressions, pp. A37-A42 (Multiply by $\frac{x}{x}$)
- **Evaluate Expressions**
  - Algebraic Expressions, pp. A5-A7
  - Exponents and Radicals, Section A.2
  - Exponential and Logarithmic Functions, Sections 3.1-3.2
  - Rational Expressions, Section A.4
- **Solving Equations and Inequalities**
  - Complex Solutions of Quadratic Equations, p.147
  - *Exponential and Logarithmic Equations, Section 3.4
  - *Factor Polynomials, p. A30
  - *Finding Inverse Functions, p. 81
  - Interpreting Inequalities, p. A2
  - Properties of Equality, p. A6 (Do the same thing to both sides)
  - *Solving Equations, Section A.5 (Skip completing the square.)
  - Solving Inequalities, pp. A61-A66
  - Zeros of Polynomial Functions, pp. 150-151, p. 154
- **Equations and Functions**
  - Domains of Functions, p. A36,
  - *Exponential Functions, Section 3.1
  - Functions, Sections 1.3, 1.7, 1.8
  - *Linear Equations in Two Variables, Section A.2 ($y = mx + b$, slope $= m = \frac{y_2 - y_1}{x_2 - x_1}$, $y - y_1 = m(x - x_1)$)
  - *Logarithmic Functions, Section 3.2
  - *Polynomials, pp. A23-A27, 121-127
  - *Quadratic Functions, Section 2.1
  - *Rational Functions, Section 2.6
- **Graphing**
  - *Analyzing Graphs of Rational Functions, p. 168
  - The Cartesian Plane, p. A78
  - Graphs of Equations, Section 1.1
  - *Graphs of Functions, pp. 41-43, 46
  - *The Leading Coefficient Test, p. 123
  - *A Library of Functions, p. 55
  - Shifting, Reflecting and Stretching Graphs, Section 1.6
  - *Sketching the Graph of a Polynomial Function, pp. 126-127
- **Distance and Location Information**
  - Absolute Value and Distance, p. A4
  - *Distance Formula, p. A80 ($d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$)
  - Equation of a Circle ($(x - h)^2 + (y - k)^2 = r^2$)
  - Midpoint Formula, p. A82 (Midpoint $= (\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2})$)
  - Vertex of a Parabola, p. 115 $(-\frac{b}{2a}, f(-\frac{b}{2a}))$
  - Standard Form of a Quadratic Function, p. 113 ($f(x) = a(x - h)^2 + k$)