2007-2008 First Semester Final Checklist

Here are the main ideas from the first semester. Little details may show up that are not listed here but this is all the key ideas

Chapter P: Equations and Inequalities

- ways to write sections of a number line: inequality, interval notation, number line graph
- concept and application of union $(\cup)$ and intersection $(\cap)$
- exponents: - what do they mean (positive, negative, zero, fraction)
  - converting back and worth with radicals
  - simplifying (using their definition and rules of exponents)
  - exponent rules $(\frac{x^a}{x^b},\ x^a x^b,\ (x^a)^b,\ (x^a y^b)^c,\ \left(\frac{x^a}{y^b}\right)^c)$
- multiplying: distribute, FOIL (binomial × binomial; binomial × trinomial)
- factoring: know the cookbook, # of terms provides a roadmap, don't be in a hurry to multiply out (look for common expressions)
- rational expressions: add/ subtract/ multiply/ divide/ complex fractions

Chapter 1: Equations and Inequalities

- solving equations: basic-all variables like terms, mimics a linear equation until the very end
  quadratic- factor or formula, what is the role of the discriminate, quadratic form
  radicals- isolate radical and eliminate it, watch for extraneous solutions
  fractions- combine into one fraction or fraction bust, watch for extraneous solutions
  polynomial – factor and set each piece equal to zero
  absolute value- isolate abs and turn into 2 possibilities (|A| = B means A = $\pm$ B)
- solving inequalities: linear – simple or combined (two inequalities in one)
  polynomials- find the zeros (*x* intercepts) and test the regions
  absolute value- think n terms of distance or find zeroes and check regions
- complex numbers: what is their definition, when do they show up, add/ sub/mult/divide. *i* to big powers
- word problems: have a systematic approach, reading well is the key, different types are work, mixture, DRT and miscellaneous

Ch 2: Coordinates and Graphs

- Basics: plotting points, quadrants, distance, midpoint
- Symmetry: *x* axis, *y* axis, origin, using points, graphs and equations, working with equations, graphs and points
- Graphing: making table and plotting points, *x* and *y* intercepts
- Circle: given info $\longleftrightarrow$ equation, complete the square, find 4 points
- Lines: given info $\longleftrightarrow$ equation, hort/vert, parallel/perpendicular, 3 forms of a line, finding points, making and using equations to fit word problems
- Variation: direct, inverse, joint, making equation, finding *k*, using in word problems
- Graphing Calculator: putting in formulas, setting window and using zoom (particularly zoom fit), finding *y*'s from a given *x*, finding *x* from a given *y*, solving equations (using zero or intercept), solving inequalities (solve the equation version and look at the graph), converting between words and numbers in word problems (is number *x* or *y*, what do the numbers mean.