Winter 2016
Math 095/Wiebe

The following list represents material that will be on the upcoming final (March 14th @ 8 or 12). I have provided the sections that have been covered in class and the important concepts discovered within each, but it is up to you to find example problems and complete them. *Remember to bring/make a 3 x 5 note card and graphing calculator!*
[A study tip: it is very beneficial to do extra problems on your own, even ones that weren't assigned, rather than simply review ones you have already completed in the homework or on quizzes.]

[Chapter 7]

7.1:

- Know how to perform function addition and subtraction (a.k.a. combine like terms)

7.2:

- Know how to perform function/polynomial multiplication for various functions/polynomials

7.3:

- Remember how to do binomial multiplication (a.k.a. Rectangle Method or FOIL)
    - Also be comfortable with multiplication of non-binomials (such as trinomials, etc.)
- Understand the product property of exponents
- Know how to get a quadratic equation into standard form

7.4:

- Know how to use the various properties of exponents listed within this section
    - quotient properties
    - exponential product properties
- Also, know when an exponential expression is completely simplified

[Chapter 10]

10.1:

- Be familiar with negative exponents and how to make them become positive.
    - Be able to simplify expressions with positive and negative exponents

10.2:

- Know the definition of a rational exponent and how to use it to simplify a problem.
- Be comfortable with simplifying rational expressions.

[Chapter 8]

8.1:

- Factoring trinomials of the form: $x^2 + bx + c$ (aka. Use a Diamond Problem)
- Difference of squares property

8.2:

- Factoring out the GCF (or GCD) of a polynomial
- Knowing when and how to use the Rectangle Method or the"factoring by grouping" method (only when you have four terms)

8.3:

- Factoring a trinomial when *a* is not equal to 1.
    - Trial and Error
    - Rectangle Method with the Diamond Problem
    - Factoring by Grouping
    - Whichever method you're most comfortable with, be sure to always show your work

8.4:

- Sums and Differences of cubes properties
    - Understand when and how to use them

8.5:

- Solving polynomial equations by factoring
    - Remember to factor, and then invoke the zero product property to let each set of parenthesis equal to 0, then solve each "new" equation.

[Chapter 12]

12.1:

- Know how to find the domain of a rational expression
- Understand how to properly simplify a rational expression.
- Know how to find the quotient function

12.2:

- Remember how to properly multiply two (or more) fractions.
- Understand how to divide rational expressions

12.3:

- Remember, the denominators need to be the same before the sum (or difference) of two fractions can be found.
    - only way to change denominators is through multiplication; other methods (i.e. addition) don't preserve the original ratio
- Review examples/extra problems as needed

[Chapter 9]

9.1:

- Graphing quadratic equations in vertex form
  - Understand how to interpret a quadratic equation when it is in vertex form
  - Remember when asked to graph a quadratic equation in vertex form by hand, you'll need to determine its concavity and approximately how wide or narrow the parabola will be, as well as pinpoint the location of the vertex.
  - How to find a quadratic equation in vertex form that model given data.

9.2:

- Graphing equations in standard form
  - Remember how to find the vertex by using the coefficients, then apply the graphing techniques used in S. 9.1.

9.3:

- Simplifying radical expressions
  - Know the product and quotient property for square roots
  - How to simplify a radical quotient
  - How to reduce a rational expression to its lowest terms.

9.4:

- Using square roots to solve quadratic equations
  - Remember the square root property (when the positive & negative appear)
  - When to take the square root of an expression and when not to.
  - Definition of a complex number, other vocabulary

~~9.5:~~

- ~~Know how to use Completing the Square to solve a quadratic equation~~

9.6:

- Be familiar with the Quadratic Formula and how to use it

[Chapter 13]

13.1:

- Review the product property for radicals
  - Review examples and extra problems as necessary

13.2:

- Review how to add, subtract, and multiply Radical Expressions
  - Remember to treat radicals almost like variables to simplify (like radicals)

13.3:

- Be familiar with the quotient property
- Know when and how to use the conjugate to solve these problems
- Be comfortable with rationalizing denominators when you aren't square rooting (for example, cube rooting instead)

13.5:

- Be familiar with the techniques used in problems with radicals
    - i.e. when to square both sides, when to check for extraneous solutions, etc.
- know how to solve problems that have two separate radical expressions