

Midterm 2

The following list represents material that may be on the upcoming test (Thursday, **3/1/16**). 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.

[A study tip: it is very beneficial to do extra problems on your own, rather than simply review ones you have already completed in the homework.]

You may use a 3x5 notecard with notes on both sides and a calculator on this exam.

Chapter 12 Rational Functions

12.1:

- Finding the domains of Rational Functions and Simplifying Rational Functions
 - Know how to find the domain of a rational expression (what values to exclude)
 - Understand how to properly simplify a rational expression (refer to the chart on page 700 if need be).
 - Know how to find the quotient function (page 703).

12.2:

- Multiplying and Dividing Rational Expressions
 - Remember how to properly multiply two (or more) fractions.
 - Understand how to divide rational expressions (page 711).

12.3:

- Adding and Subtracting Rational Expressions
 - 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. This is why we need to factor all of the denominators to figure out how to adjust them.
 - Review examples/extra problems as needed

12.5:

- Solving Rational Exprssions
 - Solving Rational equations: Remember to multiply both sides of the equation by the LCD. This gives an equivalent equation with no fractions. Then solve by factoring (Ch 8), by using the Square Root Property (Ch 9.4) or by using the Quadratic Equation (Ch 9.5)

Chapter 9: Quadratic Equations

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 quadratic equations in standard form
 - Be able to find the vertex from using the coefficients (i.e. finding h and k)
 - Remember how to graph it once you've found this, using what we learned in 9.1

9.3:

- Simplifying radical expressions
 - Know the product and quotient property for square roots
 - How to simplify a radical quotient (i.e. example 8, pg 506).
 - How to reduce a rational expression to its lowest terms.
 - Vocabulary (radicand, etc.)

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

9.6:

- Be familiar with the Quadratic Formula and how to use it
- Know when it should be used, and when other methods (factoring/square root property) will likely be quicker/easier.

[Chapter 13]

Section 13.1:

- Simplifying Radical Expressions
 - Review the product property for radicals (page 797)
 - Review examples and extra problems as necessary

Section 13.2:

- Adding, Subtracting, and Multiplying Radical Expressions
 - Radicals can only be added or subtracted if they are “like radicals”
 - When multiplying radicals, only “like parts” can be multiplied – coefficients with coefficients, and like radicals with like radicals.

Section 13.3:

- Rationalizing Denominators
 - Be familiar with the quotient property listed on page 817
 - 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)

Section 13.5:

- Solving Radical Equations

ONLY ONE PROBLEM FROM THIS SECTION

 - 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