Section #2589: 8:15 to 9:20 MTWTH in LA 228

1) Welcome: I, Terry Green, your Math 20 teacher for the spring semester of 2014, am thrilled to have you as a student! I am on your side and I really want you to learn Intermediate Algebra so well that you can successfully move on to the next level and beyond!

2) Course Outline for Math 20: These pages of information contain the guidelines for this course and should be read carefully so you will know what is expected of you. They contain information about attendance, grades, homework, exams, etc.

3) Information about your Instructor:
My Name: Terry Green
My SMC Telephone #: (310) 434-4728
My SMC E-Mail Address: green_terry@smc.edu
My SMC Web page: http://homepage.smc.edu/green_terry/

4) Textbook + Supplemental Package:
The required textbooks for Math 20 you must purchase:

The Supplemental Package for Math 20 you must purchase:
Santa Monica College Math 20 Supplement Package by Moya M. Mazorow, Revised Fall 2012

5) Materials you need to purchase for this course at our SMC bookstore or elsewhere:
   A) 1 notebook for the notes you will take every day in this class
   B) Quite a few pencils for math work and a ruler for graphing
   C) 1 scientific calculator if you do not already own one. We will use them extensively when we study logarithms.
   D) A folder to submit your homework in an organized fashion

6) Calculator Policy: Scientific calculators are valuable tools to help you learn mathematics. In terms of exams, they can only be used for the 4th exam and on the final.

7) Prerequisites for Math 20: You should have completed Math 31 Elementary Algebra with a grade of C or better. Or you should have a score on the SMC placement test that allows you to take Math 20.
8) **Course Description:** Topics include fundamental operations, equations and inequalities in one variable, rational numbers and functions, irrational numbers, complex numbers, quadratic equations and functions, exponential and logarithmic functions, linear and non-linear systems, matrices and graphing.

9) **Entry Skills for Math 20:**
   A) Simplify and perform basic operations on rational expressions.
   B) Perform basic operations on polynomials.
   C) Factor general trinomials at an elementary level.
   D) Solve linear equations in a single variable over the rational numbers.
   E) Solve second degree polynomial equations in a single variable over the rational numbers by factoring.
   F) Simplify square roots.
   G) Solve first degree linear inequalities in a single variable.
   H) Solve applications involving equations in a single variable.
   I) Solve linear systems of two equations in two variables
   J) Graph first degree equations/inequalities in one or two variables.

10) **Course Objectives:**
    A) Simplify advanced numerical and algebraic expressions involving multiple operations.
    B) Solve linear, quadratic, rational, and absolute value inequalities, graph their solution sets, and express the answer in interval notation.
    C) Solve literal equations for a designated variable.
    D) Apply algorithms of completing the square, rationalizing the denominator, and long division and synthetic division of polynomials.
    E) Solve linear, quadratic form, simple cubic, radical, rational, absolute value, exponential, and elementary logarithmic equations.
    F) Solve systems of linear equations in three variables using matrix row reduction.
    G) Graph the solution sets of linear and quadratic inequalities.
    H) Perform operations on complex numbers.
    I) Perform operations on functions including composition of two functions and determine the domain of the resulting function.
    J) Use proper mathematical notation to evaluate functions and obtain their inverses.
    K) State and apply the fundamental properties of exponents and logarithms.
    L) Demonstrate knowledge of standard vocabulary associated with graphing, including but not limited to slopes of lines, intercepts, vertex of a parabola, asymptotes, and interplay between graphs and functional notation.
    M) Given its graph, determine whether a relation is a function and whether it is one-to one, and determine its intercepts and domain and range.
    N) Graph using horizontal and vertical translations and determine the domain and range of linear, quadratic, simple cubic, rational, reciprocal, absolute value, exponential and logarithmic functions.
    O) Graph circles and parabolas using horizontal and vertical translations.
    P) Evaluate simple expressions involving summation notation.
    Q) Set up and solve practical applications of the algebraic material.
11) **Tardiness Policy:** I watched Dr. Phil one afternoon and he explained that when people are late, they are being thoughtless of others. I imagine you show up for work or time and so I am expecting you to show up on time to my class!

12) **Cell Phones and Text Messaging:** When cell phones go off in class, it is truly annoying not only to your fellow students but to your instructor as well. Turn them off! And any one caught text messaging really does not want to be in class and faces being dropped immediately!

13) **Attendance Policy:** I am expecting that you will attend every class session because at every class meeting we will cover important concepts and applications. If you are absent more than four times, you may be withdrawn from the class. If you are absent for a class session, you do not need to contact me. If you are going to be absent for an extended period of time because of illness or causes beyond your control, you can easily leave me a message on my SMC voice mail (310) 434-4728 or e-mail me at green_terry@smc.edu to let me know what is happening. I usually do not call or write back because I know I will see you when you return to class.

14) **Withdrawal Policy:** The last time to drop via the internet and get a guaranteed W and now during the first 75% of the spring semester. You can check Corsair Connect for the exact date. After that you can only get a W with my approval and under extreme extenuating circumstances.

15) **Grades:** Your spring semester grade will be determined as follows:
   A) Your 5 exams are worth 60% of your grade or 600 points.
   B) Your final exam is worth 28% of your grade or 280 points.
   C) Your cooperative learning events are worth 2% of your grade or 20 points.
   D) Your homework is worth 10% of your grade or 100 points.
   E) Thus, at the end of the spring you could have a total of 1,000 points.

16) **How your final grade is determined in June is according to your final total:**
   A) If your total is 895 points or more, (89.5% or more), you will earn an A.
   B) If your total is 795 to 894 points (79.5% to 89.4%), you will earn a B.
   C) If your total is 695 to 794 points (69.5% to 79.4%), you will earn a C.
   D) If your total is 0 to 694 points (0% to 69.4%), you will earn a D.

17) **Additional Information about Grades:**
    Because I consider homework so critical to your learning mathematics, if you do not complete and submit the majority of it, the highest grade you will be able to receive no matter how many points you have earned will be a D. Furthermore, if you fail the final (less than 50%) your grade will be a D no matter what your point total.

18) **Homework:** As mentioned above, homework is critical to your learning Intermediate Algebra. We will be using MyMathLab as the computer software to do homework for this course. You are expected to work on the sections taught in class as soon after they are taught as possible. You will collect your homework assignments and turn them in as a
package the day of each exam. 5 homework packages and the practice final will be collected. You should do your homework packages as completely and as accurately as possible always attempting to do your very best quality work. Recall that the homework packages are worth 10% of your grade or 100 points.

19) More about Homework:

A) Use pencil rather than pen to do your homework packages so you can take advantage of the eraser!

B) The first page of your homework package must be the Table of Contents of that particular homework package. You should Xerox the following package lists and check off the assignments you completed. You MUST number your pages of your package LIKE ANY BOOK so that it is easy for me to find your various assignments.

C) Show all your work. Answers alone are unacceptable and your homework package will be returned un-graded if you simply submit just the answers. Clearly Jank each homework assignment that you complete at the top of the page so that you can turn in your work in an organized fashion from the first assignment in the package to the last. For example, after the Table of Contents in the first package, place the assignments from the sections in Chapter 1 in order. Then you would have sections from Chapter 2 in order. Any extra credits would be at the end of the homework package in the order listed in the Table of Contents.

D) When you start a new assignment, use a new piece of paper. Use both sides of the paper to save our forests!

E) Work top down in an orderly fashion showing your steps. Try to arrange your work so that anyone else could easily understand what you are trying to do. Note your final answer to each problem.

F) Turn in your homework package in a folder with your name clearly written on the Table of Contents. The folder should easily open and the Table of Contents should be the first page I see. Please do not use the type of folder where all of the pages have to be taken out of the folder for me to see them.

G) Submit only one homework package in a folder and take out any homework packages that have been previously graded.

20) Sample Problem Worked Top Down and Not Left to Right

Page 54 Example 6 Solving A Linear Equation That Contains Decimals

\[
\begin{align*}
0.5x - 0.4 &= 0.3x + 0.2 \\
10(0.5x - 0.4) &= 10(0.3x + 0.2) \\
10(0.5x) - 10(0.4) &= 10(0.3x) + 10(0.2) \\
5x - 4 &= 3x + 2 \\
5x - 3x - 4 &= 3x - 3x + 2 \\
2x - 4 &= 2 \\
2x &= 6 \\
x &= 3
\end{align*}
\]

Check: \(0.5x - 0.4 = 0.3x + 0.2\)

\[
\begin{align*}
0.5 (3) - 0.4 &= 0.3 (3) + 0.2 \\
1.5 - 0.4 &= 0.9 + 0.2 \\
1.1 &= 1.1
\end{align*}
\]

The solution set is \(\{3\}\)
Helpful Hints To Be Successful in Your Math Classes!

A) **Attend class on a regular basis.** Statistics prove that students who attend class on a regularly have much greater success since learning mathematics is a step-by-step process. Every time you miss class, you are missing vital information that will make it difficult to grasp later mathematical concepts.

B) **Sit up front in the class.** When you sit up front, you have fewer distractions because the other students are behind you! The students who sit in the back of the class are usually signaling that they would rather be somewhere else!

C) **Be involved in the class.** Math is not a spectator sport! Be an active listener and take good notes, writing down key ideas and examples that are presented. Ask questions when you are unclear about different mathematical ideas. You might even tape record the lecture to be able to review material you did not understand in class.

D) **Preview new material.** Before going to class, look over the sections your instructor is going to explain the next day. This will help you have some idea what is to come and allow you to consider possible questions you might wish to raise in class.

E) **Take time to do your homework and do it soon after it has been explained.** Mathematics can be a lot of fun when you understand what you are doing! Get going on your homework as soon after it is explained as possible. How does anyone ever get good at anything? Practice, Practice, Practice!!!

F) **Stay up with the class.** When you get behind in a math class, disaster is sure to happen!

G) **Make friends in class.** Classmates can make great study partners, take notes for you when you miss class and encourage you when you may be struggling. In fact, studies indicate people who work together to learn mathematics are usually more successful. Form study groups to work on your mathematics as a team and make friends in the process!

H) **Seek assistance.** Sometimes, even when you attend class regularly, take careful notes, study your textbook and do all the homework, you still find that you do not understand certain concepts. If this happens visit your instructor during his office hours for help or go to the math lab to get help from an instructional assistant or tutor. Sometimes a different approach from an outside source may help clarify concepts you may be having difficulty understanding. All the people in the math department really want you to learn!

I) **Be neat, accurate and well organized.** You should always attempt to do quality work on all homework packages and exams. Even when you are doing online homework, you should do quality work that you could proudly hand in to your instructors.

J) **Never give up!** An interesting characteristic of learning mathematics is that at one moment you may be totally confused, and then suddenly the light bulb goes on and you understand the material! Some mathematical ideas take awhile to digest and you might find after a few days of working some of the problems related to those ideas that they actually do make sense!
K) Prepare for your exams. In math courses, your show whether you know the material on exams. Study for exams by doing by going over key concepts and applications presented by your instructors and do any practice exams provided by your instructors.

L) Congratulate yourself when you learn new material! As you learn new concepts, point out to yourself what you have learned so that your confidence in your mathematical ability will increase.

Why are you coming to Santa Monica College?

My dad, Chuck Green, says “To Learn!”

I sat with my dad, a teacher for 72 years, and asked him a few days before he died about what he thought I should talk to my students about at the beginning of a new semester. He told me “You have to teach them to learn to become learners! It’s like any other skill. It requires practice and as you go through college, you will get better at it. We all have different ways to learn and you have to find the ways that work best for you. We May all not learn at the same speed but that does not mean that we cannot learn.”

“You are getting a new start. Forget about the past and whatever might have held you back before. Move forward knowing that you can become a learner. Be as eager to learn as your instructor is eager to teach you!”

“Attach importance to the learning. As you go up the educational ladder, you will need to know the material in the earlier courses you have taken. The learning in all your courses is important! And remember that if you do not learn the material well in an earlier course, you May not do as well in the next course that follows it!”

“Learning has to be something you do on a continuous basis.” My dad said "Consider the American football player who does the kickoffs for a football team. To be a good kicker, he has to practice every day so that when game time comes he will be able to kick the ball where he wants it to go. The same is true with learning. You need to do your homework on a daily basis so that when the exam comes, you will be able to demonstrate that you know the material covered on the exam.”

My dad gave another analogy. He said “In a sport, say basketball, you can see yourself improve as you learn to shoot better. In the skills you are learning at college, you have to see yourself improving as well. You are learning skills that will be valuable your entire life. After you finish college and go out into the work world, you will build on the skills you learned in college.”

My dad said “See your teacher for who he or she is - someone who is helping you learn skills that are going to help you your entire life. Ask questions in class and go to his or her office hours because your instructor is an important part of your lifelong pursuit of learning.”

He added “You need to know your special reason for learning at SMC. How you learn is important, what you learn is important, but why you learn is most important! If you feel that learning is desirable, you will make progress in your education.”
<table>
<thead>
<tr>
<th>Chapter 1: Linear Equations and Inequalities</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1 Linear Equations in One Variable</td>
<td>Feb 18</td>
</tr>
<tr>
<td>1.2 An Intro to Problem Solving</td>
<td>Feb 19</td>
</tr>
<tr>
<td>1.3 Using Formulas to Solve Problems</td>
<td>Feb 20</td>
</tr>
<tr>
<td>1.4 Linear Inequalities in One Variable</td>
<td>Feb 20, 24</td>
</tr>
<tr>
<td>1.5 Rectangular Coordinates &amp; Graphs of Equations:</td>
<td>Feb 24</td>
</tr>
<tr>
<td>1.6 Linear Equations in Two Variables</td>
<td>Feb 25</td>
</tr>
<tr>
<td>1.7 Parallel and Perpendicular Lines</td>
<td>Feb 25, 26</td>
</tr>
<tr>
<td>1.8 Linear Inequalities in Two Variables</td>
<td>Feb 26</td>
</tr>
<tr>
<td>Chapter 1 Review</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chapter 2: Linear Equations and Inequalities in Two Variables</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1 Relations</td>
<td>Feb 27</td>
</tr>
<tr>
<td>2.2 An Introduction to Functions</td>
<td>Feb 27, March 3</td>
</tr>
<tr>
<td>2.3 Functions and Their Graphs</td>
<td>March 3</td>
</tr>
<tr>
<td>2.4 Linear Functions and Models</td>
<td>March 4</td>
</tr>
<tr>
<td>2.5 Compound Inequalities</td>
<td>March 5</td>
</tr>
<tr>
<td>2.6 Absolute Value Equations and Inequalities</td>
<td>March 6</td>
</tr>
<tr>
<td>Chap 2 Review</td>
<td></td>
</tr>
</tbody>
</table>

Extra Credits from the book should be placed in your homework package in the following order after Chapter 2 Review:

- Practice Exam Hand-out #1!!!
- Chapter 1 Test (ALL)
- Chapter 2 Test (ALL Except 21 and 22)
- Cumulative Review Chapters R-1 (ODDS)

Again, Exam #1 is tentatively scheduled for Monday, March 10th.

Exam #1 will cover the material from Chapters 1 and 2.
Table of Contents for Package #2

Due the day of Exam #2 scheduled for Tuesday, April 1st.
The days we will study the various sections in class are listed in the right-hand column.

Xerox this page and make it your title page of your homework. In the spaces provided in the left hand column, put the page numbers of your completed homework. For example, next to 4.1 might be 1-2, next to 4.2 might be 3-4, next to 4.3 might be 5-7, etc.

### Chapter 4: Polynomials and Polynomial Functions

<table>
<thead>
<tr>
<th>Section</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.1 Adding and Subtraction Polynomials</td>
<td>March 11</td>
</tr>
<tr>
<td>4.2 Multiplying Polynomials</td>
<td>March 11, 12</td>
</tr>
<tr>
<td>4.3 Dividing Polynomials: Synthetic Division</td>
<td>March 12</td>
</tr>
<tr>
<td>4.4 Greatest Common Factor: Factoring by Grouping</td>
<td>March 13</td>
</tr>
<tr>
<td>4.5 Factoring Trinomials</td>
<td>March 13, 17</td>
</tr>
<tr>
<td>4.6 Factoring Special Products</td>
<td>March 17</td>
</tr>
<tr>
<td>4.7 Factoring: A General Strategy</td>
<td>March 19</td>
</tr>
<tr>
<td>4.8 Polynomial Equations</td>
<td>March 19, 20</td>
</tr>
<tr>
<td>Chapter 4 Review</td>
<td></td>
</tr>
</tbody>
</table>

### Chapter 5: Rational Expressions and Functions

<table>
<thead>
<tr>
<th>Section</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.1 Multiplying and Dividing Rational Expressions</td>
<td>March 20</td>
</tr>
<tr>
<td>5.2 Adding and Subtracting Rational Expressions</td>
<td>March 24</td>
</tr>
<tr>
<td>5.2 Multiple Operations with Rational Expressions</td>
<td>March 24, 25</td>
</tr>
<tr>
<td>5.3 Complex Rational Expressions</td>
<td>March 25</td>
</tr>
<tr>
<td>5.3 Evaluating Rational Expressions</td>
<td>March 26</td>
</tr>
<tr>
<td>5.4 Rational Equations</td>
<td>March 26, 27</td>
</tr>
<tr>
<td>5.5 Rational Inequalities</td>
<td>March 27</td>
</tr>
<tr>
<td>5.6 Models Involving Rational Expressions</td>
<td>March 31</td>
</tr>
<tr>
<td>Chapter 5 Review</td>
<td></td>
</tr>
</tbody>
</table>

Extra Credits from the book should be placed in your homework package in the following order after Chapter 5 Review:

<table>
<thead>
<tr>
<th>Section</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Practice Exam Hand-out #2!!!</td>
<td></td>
</tr>
<tr>
<td>Cumulative Review Chapters R-5 (ODDS)</td>
<td></td>
</tr>
</tbody>
</table>

Again, Exam #2 is tentatively scheduled for April 1st.

Exam #2 will cover the material from Chapters 4 and 5 and Supplements 2 and 3.
Table of Contents for Package #3

Due the day of Exam #3 scheduled for Wednesday, April 30th.

The days we will study the various sections in class are listed in the right-hand column.

**Chapter 6: Radicals and Rational Exponents**

- 6.1 nth Roots and Rational Exponents
- 6.2 Simplify Expressions Using Laws of Exponents
- 6.3 Simplifying Radical Expressions
- 6.4 Adding, Subtracting, * Multiplying Radical Expressions
- 6.5 Rationalizing Radical Expressions
- 6.6 Functions Involving Radicals
- 6.7 Radical Equations and Their Applications
- 6.8 Complex Number System

**Chapter 7: Quadratic Equations and Functions**

- 7.1 Solving Quadratic Equations by Completing the Square
- 7.2 The Quadratic Formula
- 7.3 Solving Equations Quadratic in Form

Extra Credits from the book should be placed in your homework package in the following order after Section 7.3:

- Practice Exam Hand-out #3!!!
- Cumulative Review Chapters R-7 (ODDS)

Again, Exam #3 is tentatively scheduled for Wednesday, April 30th. We will review for the exam on Tuesday, April 29th.

Exam #3 will cover the material from Chapters 6 and 7.1-7.3.
Table of Contents for Package #4

Due the day of Exam #4 scheduled for Monday, May 19th.

The days we will study the various sections in class are listed in the right-hand column.

Chapter 7: Quadratic Equations + Functions Continued
____ 7.4 Graphing Quadratic Functions Using Transformations May 1
____ 7.5 Graphing Quad Functions Using Prop May 5
____ 7.6 Quadratic Inequalities May 6

Chapter 8: Exponential and Logarithmic Functions
____ 8.1 Composite and Inverse Functions May 7
____ 8.2 Exponential Functions May 8
____ 8.3 Logarithmic Functions May 12
____ 8.4 Properties of Logarithms May 13
____ 8.5 Exponential and Logarithmic Equations May 14

Extra Credits from the book should be placed in your homework package in the following order after Section 8.5:
____ Practice Exam Hand-out #4!!
____ Chapter 7 Review (81 - 125 EVERY OTHER ODD + 119)
____ Chapter 8 Test (1 - 21 ALL) + Page 688 (1 + 5)
____ S.7 Inequalities with Non-Alternating Patterns
____ Chapter 8 Review (EVERY OTHER ODD)

Again, Exam #4 is tentatively scheduled for Monday, May 19th. We will review for the exam on Thursday, May 15th.

Exam #4 will cover the material from the second half of Chapter 7 and all of Chapter 8 and Supplement 7.
Table of Contents for Package #5

Due the day of Exam #5 scheduled for Thursday, June 5th.
The days we will study the various sections in class are listed in the right-hand column.

Chapter 3: Systems of Linear Equations and Inequalities
- 3.1 2 Variables
- 3.2 Problem Solving
- 3.3 Three Variables
- 3.4 Matrices
- 3.6 Systems of Linear Inequalities

Chapter 9: Nonlinear Systems and the Conic Sections
- 9.2 Circles
- 9.6 Systems of Nonlinear Equations
- 10.1 Sequences ("Sigma Notation" only)
- 5.4 Graphing Radical Functions
- 5.5 Transformations of Other Functions + Relations
- 5.6 Graphing Using Transformations

Extra Credits from the book should be placed in your homework package in the following order after 5.6 Graphing Using Transformations:
- Practice Exam Hand-out #5!!!
- Chapter 3 Review (1-69 EVERY OTHER ODD, 91-101 ODDs, 27)
- Chapter 9 Review (13-39 ODDs, 57-73 ODDs)
- 9.3 Parabolas (13-20 All, 23, 39-47 ODDs)
- Chapter 3 Test (1-11, 16-17 ALL)
- Chapter 9 Test (3-10, 18-19 ALL)
- Cumulative Review Chapters R-9

Again, Exam #5 is scheduled for Thursday, June 5th.

Exam #5 will cover the material from Chapters 3 and 9 and Supplements 4, 5 and 6.

We will review for the Final Exam on Wednesday, June 4th and Monday, June 9th. Two special assignments to help you prepare for the final are Supplement 9 and A Great Review for the Final for You!

The final is scheduled for Wednesday, June 11th at 8 am.