

A SUCCESSFUL ON-LINE ALGEBRA COURSE

Pamela B. Cohen

Associate Professor of Mathematics

Southern New Hampshire University

p.cohen@snhu.edu

A SUCCESSFUL ON-LINE ALGEBRA COURSE

- ◆ Distance Education at SNHU
- ◆ SNHU Math Requirements
- ◆ Important Considerations
- ◆ Course Features
- ◆ Challenges

DISTANCE EDUCATION AT SNHU



- ◆ Began in 1996
- ◆ 7,000+ enrollments/yr.
- ◆ Mainly Non-Traditional Age Students
- ◆ Asynchronous
- ◆ 100% Internet-Based
- ◆ Eight-Week Courses
- ◆ Complete Degree Programs Offered

SNHU MATH REQUIREMENTS

- ◆ MAT 120 Finite Mathematics
- ◆ MAT 220 Introductory Statistics
- ◆ Other Requirements (for Business Majors)
 - MAT 121 Topics in Quantitative Analysis
 - MAT 151 Calculus
 - MAT 230 Discrete Math

IMPORTANT CONSIDERATIONS

◆ Creating a Collaborative Community

- Student Introductions
- Student Homepages
- Learning Styles Inventory

◆ Student Interaction

- Exploration Lessons
- Discussion Board

◆ Faculty Facilitation

- Lessons
- Discussion Board
- Individual Feedback

COURSE AREAS

- ◆ Announcements
- ◆ Course Information
- ◆ Staff Information
- ◆ Course Documents
- ◆ Assignments
- ◆ Communication
- ◆ Discussion Board
- ◆ External Links
- ◆ Tools

SAMPLE ANNOUNCEMENT

Welcome
Announcement

[COURSES](#) > MAT-050-X1801



Announcements

Course Information

Staff Information

Course Documents

Assignments

Communication

Discussion Board

External Links

Tools

Resources

Course Map

Control Panel



Fri, Aug 29, 2003 -- **Welcome to MAT 050!!!!**

Welcome, I am glad to meet you!!!

Posted by Blackboard5
Administrator

Check out our class areas:

Course Information - Syllabus, Assignment Timeline, Course Procedures, and other general information.

Staff Information - Information about me

Course Documents - Notes on each chapter we cover

Assignments - Required and optional homework problems for each chapter, worked out homework solutions, and tests (once assigned)

Communication - Discussion Board, E-mail, and Roster (to view student homepages)

Discussion Board - Area to collaborate about coursework with classmates and me. **I expect you to contribute to this discussion at least 3 times per week.**

Tools - Digital drop box (for sending in assignments), Edit your homepage (to share information about yourself with classmates), Gradebook (to check your status in this course)

External Links - Helpful math internet sites

Suggestions for opening documents:

- 1) Open the document in a new window. Once you maximize that window the formatting should make it easier to read. If the formatting looks bizarre (I use Comic Sans which sometimes presents font conflicts), Select All and change the font to something you know you have on your computer)
- 2) Save Target As - If you want to save the file, this is the way to go. Then you can open the file within the program it was created with later on.

SAMPLE ANNOUNCEMENT



Announcements

Course Information

Staff Information

Course Documents

Assignments

Communication

Discussion Board

External Links

Tools

Resources

Course Map

Control Panel



Thu, Sep 18, 2003 -- Simple & Compound Interest

A few important issues have come up in the Chapter 3 Discussion:

- 1) I am adding a new forum for discussion of applications as the older forum is getting very full and hard to manage.
- 2) Bravo to those of you that found my error on the Simple Interest notes Objective B Example 3. $.12 * 1/6 = .02$. I will have to hire you as editors. Thanks.
- 3) The answers for HW 12 - Interest Worksheet are now available, I moved the date up since some of you are ready to check your answers. The problems with * indicate problems that often are challenging.

Reminder: Test #1 will be posted tomorrow.

I decided to only cover Chapter 1 & 2 on Test #1 to give everyone feedback on HW 8-11. This means that Test #1 will only cover HW 2-11.



Mon, Sep 15, 2003 -- Week 3: Linear Equations Continued

I'm back!!!! Got home from Syracuse last night at midnight after a wonderful visit with our daughter. Now I am busy catching up with our course discussion from the weekend so that you can submit HW 8-11 by tomorrow.

This week we will continue the study of linear equations by working on applications of equations in the "Real World". The vast majority of real life applications of algebra involve using formulas: income taxes, sales, profit & loss, temperature, area, to name a few. If you can use formulas as a means to solve problems, you will be able to handle almost all of the real math problems that will face you in the future. This week we will study some of those applications (most word problems aren't as difficult as we think they are). Take a deep breath and plunge ahead!!!!!! I am here to help you along the way.

Follow my comments on for each HW below:

HW #12 Simple & Compound Interest

This topic is **not** covered in your text. Make sure to use my lecture notes as a guide for this material. You will go into greater detail with interest next term in MAT 120. The HW #12 worksheet is in Assignments. I have also

Follow-up
Announcement

Early Week
Announcement

COURSE INFORMATION



Announcements

Course Information

Staff Information

Course Documents

Assignments

Communication

Discussion Board

External Links

Tools

Resources

Course Map

Control Panel

Course Information

Current Location: Course Information



Welcome Memo

[Word File](#) (32768 Bytes)



Syllabus

[Word File](#) (71680 Bytes)



Course Procedures

[Word File](#) (45056 Bytes)



Assignment Timetable

[Word File](#) (43008 Bytes)



Ten Commandments

[Word File](#) (24576 Bytes)

This document tells you what you must do to be successful in a math class.



Study Skills Survey

[Word File](#) (28160 Bytes)

Assess your strengths and weaknesses when it comes to studying math.



Learning Styles Inventory

[Word File](#) (43008 Bytes)

How do you learn?



Equation Editor

[Word File](#) (261632 Bytes)

How to type math symbols on the computer?



Using MS Word with Math Symbols

[Word File](#) (56832 Bytes)

Thank you to Mr. Roy Whalen for sharing this information with us.

Course Related Information

Study Skills

Math
Information

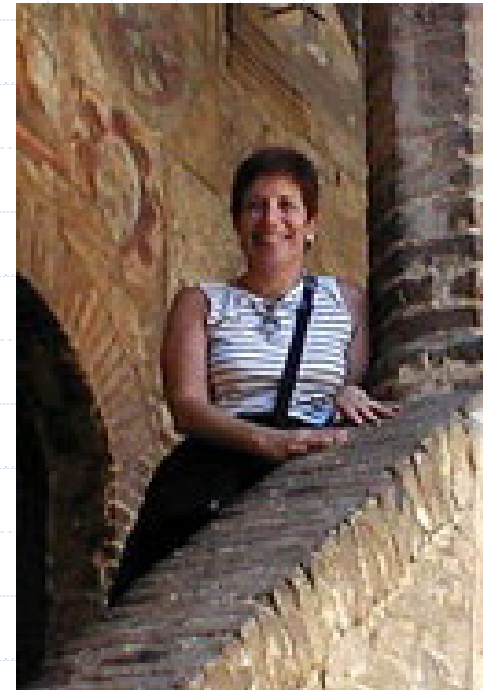
STAFF INFORMATION

◆ Contact Information

- E-Mail
- Phone
- Fax
- Office Hours

◆ Personal Biography

- Teaching Background
- Personal Interests



COURSE DOCUMENTS



Announcements

Course Information

Staff Information

Course Documents

Assignments

Communication

Discussion Board

External Links

Tools

Resources

Course Map

Control Panel



Chapter 4 Polynomials

Objectives 4.1-4.5A

- 4.1 Addition and Subtraction of Polynomials
 - 4.2 Multiplying Monomials
 - 4.3 Multiplying Polynomials
 - 4.4 Negative Exponents & Scientific Notation
 - 4.5A Dividing a Polynomial by a Monomial (Use the text for this topic)
- We **do not** cover 4.5B

Folder for Each
Chapter

Follow your text's explanation for the objectives without lecture notes. It is actually pretty good on these topics.



Chapter 6 Equations with Fractions

- 6.6A Solving Proportions
- 6.5A Equations with Fractions
- 6.6B Applications of Proportions
- 6.7A Literal Equations



Chapter 7 Linear Equations in Two Variables

- Graphing Linear Equations
- X & Y Intercepts
- Slopes
- Slope/Intercept Form of an Equation
- Equation of a Line



Chapter 11 Quadratic Equations

- 11.3 The Quadratic Formula
- 11.4 Graphing Quadratic Equations (my approach is a bit different than your text)



Chapter 9 Inequalities

- 9.3 Solving Inequalities
- 9.4 Graphing Linear Inequalities

SAMPLE COURSE DOCUMENTS

- ◆ Solving Percent Equations
- ◆ Graphing Linear Equations
- ◆ Finance Flowchart

Course Document Challenges

- ◆ Formatting Problems
- ◆ Missing Images
- ◆ Interactive Elements Needed

Visible once
tests posted.

ASSIGNMENTS



Tests

All tests are due by Monday morning at 10 am.

You may use your calculator, text, lecture notes, and the homework for reference. This is to be your own work. You are **not permitted** to get help from: me, classmates, spouses, children, friends, pets, etc. **Failure to follow these rules will result in automatic failure in this course.** I trust that you will all adhere to this honor system.

Appears after
homework submitted



Homework Solutions

You can find my solutions to many of the common problems that I have posted. I will post solutions each week for new additions.

Entire Course
Assignment
Schedule



Assignment Timetable

Word File (43008 Bytes)

This is the same timetable that is in Course Information. It lists **all required** assignments and tests with their due dates.

In addition, for each chapter (See individual chapter assignments below) you will find another listing of **optional practice problems** keyed to each objective that we cover.



Chapter 1 & 2 Pre-Tests

In case you haven't gotten your book yet, I am posting copies of HW 2 & 3, the pre-tests that are due this Thursday.



Chapter 1 Real Numbers

Html File (13451 Bytes)

Required and Optional Practice Problems are given. The optional problems are keyed to each objective that we cover.

Required & Optional
Practice



Chapter 2 Variable Expressions

Html File (11274 Bytes)

Required and Optional Practice Problems are given. The optional problems are keyed to each objective that we cover.

SAMPLE ASSIGNMENTS

- ◆ Assignment Timetable
- ◆ Chapter 1 Review
- ◆ Slope Intercept Worksheet
- ◆ Student Test #1
- ◆ Student Test #2

Assignment Challenges

- ◆ Academic Honesty
- ◆ Technology Proficiency
- ◆ Incompatible Software

COMMUNICATION

◆ E-mail

- Assignment/Test Feedback
- Private Communication

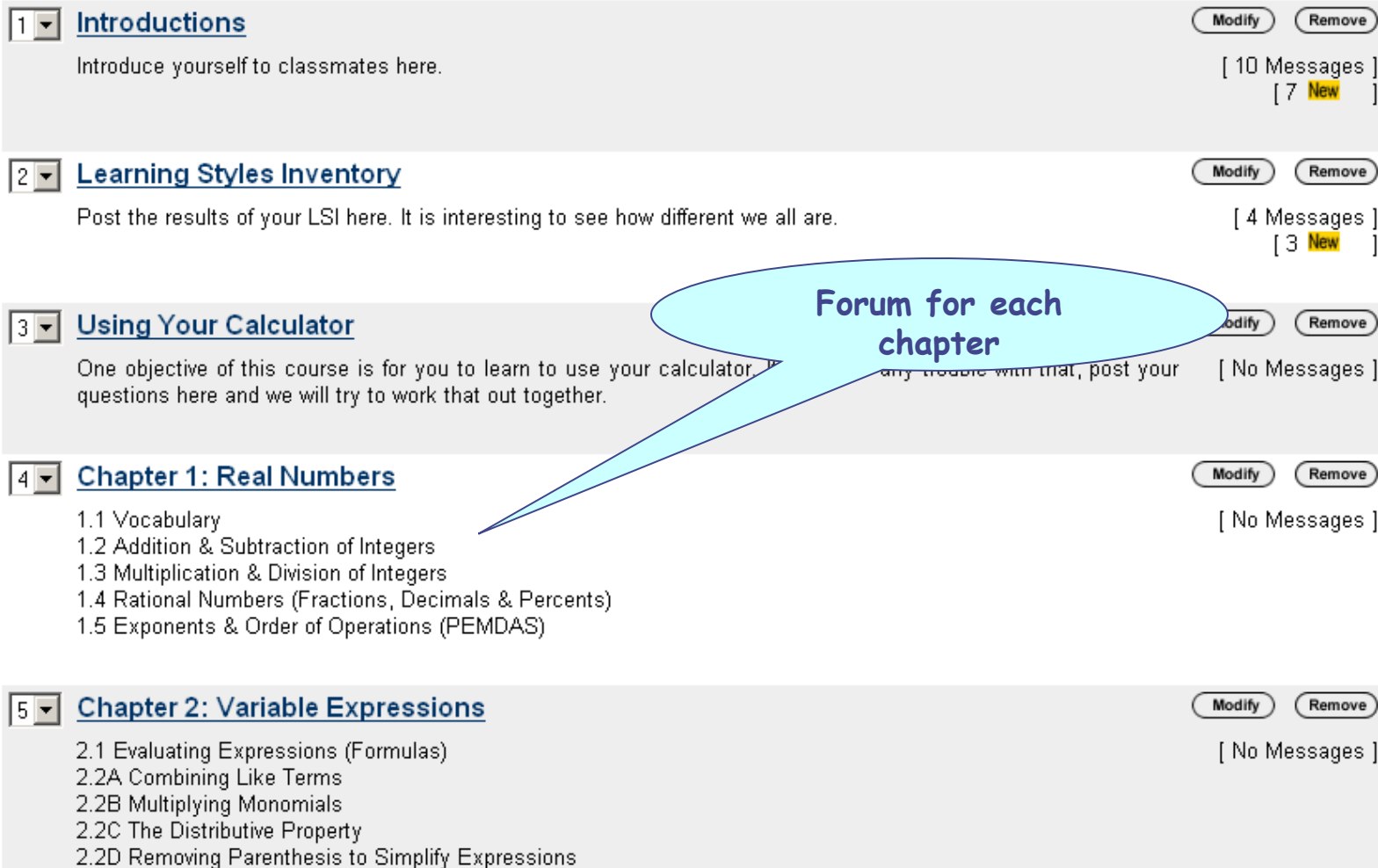
◆ Discussion Board

- Class Conversations
- Discuss Homework Problems
- Post at least 3 times per week

◆ Virtual Chat

- Drop-in Office Hours

DISCUSSION BOARD



1 [Introductions](#) Modify Remove
Introduce yourself to classmates here. [10 Messages]
[7 **New**]

2 [Learning Styles Inventory](#) Modify Remove
Post the results of your LSI here. It is interesting to see how different we all are. [4 Messages]
[3 **New**]

3 [Using Your Calculator](#) Modify Remove
One objective of this course is for you to learn to use your calculator. If you have any trouble with that, post your questions here and we will try to work that out together. [No Messages]

4 [Chapter 1: Real Numbers](#) Modify Remove
1.1 Vocabulary
1.2 Addition & Subtraction of Integers
1.3 Multiplication & Division of Integers
1.4 Rational Numbers (Fractions, Decimals & Percents)
1.5 Exponents & Order of Operations (PEMDAS) [No Messages]

5 [Chapter 2: Variable Expressions](#) Modify Remove
2.1 Evaluating Expressions (Formulas)
2.2A Combining Like Terms
2.2B Multiplying Monomials
2.2C The Distributive Property
2.2D Removing Parenthesis to Simplify Expressions [No Messages]

Forum for each chapter

SAMPLE DISCUSSION FORUM



Announcements

Course Information

Staff Information

Course Documents

Assignments

Communication

Discussion Board

External Links

Tools

Resources

Course Map

Control Panel

Add New Thread

VIEW UNREAD MESSAGES ▼

EXPAND ALL +

COLLAPSE ALL -

SEARCH ?

HIDE OPTIONS



<input type="checkbox"/>	<input type="checkbox"/> 3.2b		Sep 18 2003 4:00 pm
<input type="checkbox"/>	<input type="checkbox"/> Re: 3.2b		Thu Sep 18 2003 4:08 pm
<input type="checkbox"/>	<input type="checkbox"/> Re: 3.2b		Fri Sep 19 2003 11:34 am
<input type="checkbox"/>	<input type="checkbox"/> HW#14 a page 109 number 115		Thu Sep 18 2003 9:27 pm
<input type="checkbox"/>	<input type="checkbox"/> Re: HW#14 a page 109 number...		Fri Sep 19 2003 9:24 am
<input type="checkbox"/>	<input type="checkbox"/> Re: HW#14 a page 109 num...		Fri Sep 19 2003 1:35 pm
<input type="checkbox"/>	<input type="checkbox"/> Re: HW#14 a page 109 ...		Fri Sep 19 2003 6:53 pm
<input type="checkbox"/>	<input type="checkbox"/> Re: HW#14 a page 109 num...		Sat Sep 20 2003 2:11 pm
<input type="checkbox"/>	<input type="checkbox"/> Simple interest B #5		Thu Sep 18 2003 10:28 pm
<input type="checkbox"/>	<input type="checkbox"/> Re: Simple interest B #5		Fri Sep 19 2003 9:30 am
<input type="checkbox"/>	<input type="checkbox"/> Re: Simple interest B #5		Fri Sep 19 2003 1:36 pm
<input type="checkbox"/>	<input type="checkbox"/> Re: Simple interest B #5		Fri Sep 19 2003 9:43 pm
<input type="checkbox"/>	<input type="checkbox"/> Re: Simple interest B #5		Sun Sep 21 2003 7:51 pm
<input type="checkbox"/>	<input type="checkbox"/> HW 14b; p. 126; #39		Fri Sep 19 2003 9:35 am
<input type="checkbox"/>	<input type="checkbox"/> Re: HW 14b; p. 126; #39		Sat Sep 20 2003 2:21 pm
<input type="checkbox"/>	<input type="checkbox"/> Re: HW 14b; p. 126; #39		Sat Sep 20 2003 6:00 pm
<input type="checkbox"/>	<input type="checkbox"/> pg 125 #35		Sun Sep 21 2003 7:10 pm
<input type="checkbox"/>	<input type="checkbox"/> Re: pg 125 #35		Mon Sep 22 2003 3:14 pm

Threads Grouped by Subject

SAMPLE DISCUSSION



Announcements

Course Information

Staff Information

Course Documents

Assignments

Communication

Discussion Board

External Links

Tools

Resources

Course Map

Control Panel

Subject: Simple interest B #5

Remove

Dont know why, but I did not get 12%..
I think it is the "fraction" issue..
Anyone have the example so I can see it done??

Jenine

Student Posted
Question

Reply

Current Forum: Chapter 3 Applications

Read 17 times

Date: Fri Sep 19 2003 9:30 am

Author: Cote, Michele <m_cote86@minerva.snhu.edu>

Subject: Re: Simple interest B #5

Remove

Hi Jenine – These are my calculations – hope they help.

$$545 = 500 [1 + (r) (.75)]$$

$$545 = 500 [1 + .75r]$$

$$545 = 500 + 375r$$
$$-500 - 500$$

$$45 = 375r$$

Isolate "r" by dividing by each side by 375

$$45 / 375 = 0.12$$

$$r = 12\%$$

Student Posted
Response

Reply

SAMPLE DISCUSSION



Announcements

Course Information

Staff Information

Course Documents

Assignments

Communication

Discussion Board

External Links

Tools

Resources

Course Map

Control Panel

Discussion Board

<< Previous Message Next Message >>

Current Forum: Course Evaluation

Date: Sat Oct 25 2003 5:23 pm

Author: Crumley Aybar, Bonnie L. <b_crumleyaybar58@minerva.snhu.edu>

Subject: evaluation

Read 6 times

Student
Feedback

Remove

Hi, I submitted the DE evaluation, I am assuming this spot is for other feedback. I thought this course was challenging, but I liked the format of students assisting each other with questions. The feedback from Professor Cohen as well as other students really did help alot, and was direct, which I appreciated. I learned that while working online I do better if I say what I'm writing to retain it or catch mistakes easier. I am taking the next math course which is finite mathematics. I'm looking forward to working with some of my classmates again, misery enjoys commradery!
Bonnie

Reply

<< Previous Message Next Message >>

Current Thread Detail:

[evaluation](#)

[Crumley Aybar, Bonnie L.](#)

Sat Oct 25 2003 5:23 pm

OK

TOOLS

- ◆ Digital Drop Box
- ◆ Edit Your Home Page
- ◆ Gradebook
- ◆ On-Line Manual

EXTERNAL LINKS



Text Book Web Site (http://college.hmco.com/mathematics/aufmann/introductory_algebra/6e/students/)

This is the page for all resources available on line for our text.



Practice Quiz Site

(http://college.hmco.com/mathematics/aufmann/introductory_algebra/6e/students/ace.html)

Here you will find quizzes for every objective in the text.



Algebra Help on the Web (<http://www.algebrahelp.com/>)

Thank you Kim Fyler for finding this very useful site!!!



A Collection of Math Stuff (<http://mathforum.org/dr.math/index.html>)

There is a huge collection of information available here. Pick a topic and see what is available.



Typing Math Symbols on the Computer (<http://mathforum.org/dr.math/faq/faq.typing.math.html>)

This document will give you some easy tips for typing math symbols on-line.



History of Calculating Devices (<http://americanhistory.si.edu/teachingmath/>)

An interesting Smithsonian Institute exhibit about different calculating devices.



History of Mathematics Site (<http://www-groups.dcs.st-andrews.ac.uk/~history/>)

A collection of information about mathematicians and their accomplishments. You can find information by topic, mathematician name or by time frame. There is also a listing for women mathematicians.



Graph Paper on the Web (http://www.mathematicshelpcentral.com/graph_paper.htm)

There are several different types of graph paper that you can print out for yourself. I suggest choosing Black & White to save your ink cartridge.



Texas Instrument Calculator Guides (<http://www.education.ti.com/us/global/guides.html>)

You can get instructions on using your TI calculator here.

CONTINUING CHALLENGES

- ◆ Formatting Documents
- ◆ Missing Images
- ◆ Student Experience with Technology
- ◆ Incompatible Software
- ◆ Non-interactive Lessons
- ◆ Academic Honesty

TEACHING OPPORTUNITIES

On-Line teaching application is available at the Southern New Hampshire University Web-Site.

www.snhu.edu

- Academics
- SNHU On-Line
- SNHU On-Line Faculty
- Apply SNHU On-Line Program

QUESTIONS??????

For additional information:

Contact me at p.cohen@snhu.edu