

Math 101, Basic Algebra

Shasta College, Fall 2012, Section F4297

Course: Math 101, Basic Algebra
MWF, 12 to 12:50 pm
Room 1107
3 Credit Hours
Instructor: Thomas Glass
Office: 743
Phone: (530) 242-2310
email: tglass@shastacollege.edu
Website: www.SumOfCubes.weebly.com
Office Hours: TTh: 9 to 10 am
MWF: 10:00 to 11:00 am

1. **Catalog Description.** A first course in algebra designed to cover the basic concepts and operations of algebra including solving linear equations, exponent laws, arithmetic and factoring of polynomials, and graphing linear equations in two variables. Applications are encountered throughout the course.

- (a) Pre-requisite: A grade of C or higher in MATH 240 or MATH 260, or MATH Placement Level 2 or higher
- (b) Advisory: A grade of C or higher in ENGL 280, or English Placement Level 5 or higher.

2. **Course Objectives.**

Upon successful completion of this course, the student should be able to:

- (a) Evaluate algebraic expressions and "formulas."
- (b) Use formulas to solve realistic problems.
- (c) Evaluate expressions containing integer exponents.
- (d) Use the simplification rules for products, quotients and powers of expressions containing integer exponents.
- (e) Explain the concept of a function using an input/output or independent/dependent model.
- (f) Solve a linear equation in one variable.
- (g) Solve a linear inequality in one variable and graph the solution set on the number line.
- (h) Graph the solution sets for: $x < n$, $x > n$, xn , xn on the number line.
- (i) Graph solutions of an equation in two variables by plotting points.
- (j) Use a graph to obtain information and answer questions.
- (k) Describe the geometric meaning of the slope of a line as $\frac{\text{rise}}{\text{run}}$.
- (l) Add, subtract, and multiply polynomials.
- (m) Divide a polynomial by a monomial.

- (n) Factor out the GCF from a polynomial.
- (o) Factor a polynomial by grouping.
- (p) Factor a quadratic trinomial.

3. **Student Learning Outcomes.** Upon successful completion of the course, a student should be able to accurately apply steps of problem solving to solve a problem as follows:

- (a) Demonstrate understanding of the problem.
- (b) Choose an appropriate problem-solving strategy.
- (c) Effectively solve the problem using the chosen strategy.
- (d) Clearly state the correct solution to the problem.

Example. Sophie Germain cuts a 96 inch pipe into three pieces. The second piece is four inches shorter than the first piece, and the third piece is two times as long as the second piece. How long is each piece?

4. **Assigned and Recommended Text and Materials.**

- (a) **Required Text.** *“Math 101 – Beginning Algebra Problem Set”*.
- (b) **Required Materials.**
 - i. The “Required Text”.
 - ii. Paper, pencil, eraser and notebook. I would suggest a 3-ring binder, but the choice is yours.
 - iii. www.SumOfCubes.weebly.com
 - iv. The Math Lab, located in the 700 Building has a reserve copy and solutions manual available.

5. **Statement of Instructional Methods.**

- (a) **Success.** Come to class ready to participate, take notes, and ask questions. Each class period will begin with an open session to review homework. This is your chance to ask questions regarding the assigned homework.

Be prepared for class by bringing all required materials and having completed or at least attempted homework assigned in the last class.

Find a study partner. You will find that the more you talk, write and see math, the better and easier it is to learn and remember.

If there is one piece of advice that works best, it is: “Repetition is the mother of all learning.” The more you see strategies to solve and utilize what you have learned, the easier the next concept becomes. I will show you how to solve and work in the math environment, and it may appear easy. But, at some point you need to do it on your own, without my guidance, to really “own” the concept.

Office hours are for the student, not the professor. Office hours are your time to ask me questions. If you are struggling with homework or something we did in lecture and you have a question, please come ask. Sometimes a little one-on-one help is all you need. My office hours are on the top of the first page, but if I’m in the office, and the door is open, you are welcome.

Shasta College staffs a full-time **Math Business Learning Center**. It is a place to get free math tutoring. It is staffed with helpful math tutors who like to talk math and are

there to assist you. Put them to work and keep them busy. In addition to the tutors are videotapes, software, and solutions manuals. The Math lab is open **Monday-Friday**.

- (b) **Note.** This syllabus is subject to change by the instructor. Any changes will be announced in class and are the responsibility of the student.

6. Course Content.

- (a) Preliminaries
 - i. Meaning of algebraic symbols
 - ii. Operations with real numbers
 - iii. Evaluation of algebraic expressions.
- (b) Linear Equations in One Variable
 - i. Solving linear equations
 - ii. Solving linear inequalities
 - iii. Applied problem solving.
- (c) Exponent laws
 - i. Simplifying expressions with natural number exponents
 - ii. The meaning of a zero exponent and negative integer exponents
 - iii. Simplifying expressions with integer exponents.
- (d) Polynomial arithmetic
 - i. Addition and Subtraction
 - ii. Multiplication
 - iii. Division
 - iv. Applied problem solving.
- (e) Factoring polynomials
 - i. Common factors
 - ii. Grouping
 - iii. Quadratic trinomials
 - iv. Solving equations by factoring
 - v. Applied problem solving.
- (f) Linear equations in two variables
 - i. Solutions of linear equations in two variables
 - ii. Graphing linear equations in two variables
 - iii. Functions
 - iv. Slope of a line
 - v. Applied problem solving.

7. Grading Policies.

- (a) **Exams.** There will be 4 exams and a final exam. Exam dates will be announced in class at least one class prior to the exam. Exams will comprise both written and multiple choice questions. Your lowest exam score will be dropped in determining your class grade. If you must miss a class for any reason, and your absence causes you to miss an exam, that is the exam you drop. *There are no make-up exams.*

- (b) **Final Exam.** The final exam is mandatory and is not dropped in calculating your grade. The final exam will only be administered on Monday, December 17th from 10:30 am to 12:30 pm.
- (c) **Grading.** Grades will be posted online. You may view your grades at any time via SumOfCubes.com or via GradeSource.com. You will need a secret code to discern which grade is yours. If you would like to utilize this resource, make sure I have your correct email address.

Exams (drop the lowest)	75%
Final Exam	25%
<i>Total</i>	
	100%

Grade Scale	
90% ≤	A
80% ≤	B < 90
70% ≤	C < 80
60% ≤	D < 70
	F < 60

8. Classroom Policies.

- (a) **Electronic Devices.** This is a cell phone free class. All cell phones, blackberries, pagers, iPods, iPads, etc are to be turned off or silent. Students found using such devices during class will receive a zero on the next exam.
- (b) **Email.** Much of an education is the ability to clearly communicate and express ideas; thus, if you choose to communicate with me via email, it must be done using proper English grammar. I will not respond to any emails that are not properly composed.
- (c) **In Class Communication.** If you have a question, please raise your hand and ask. Do not converse with your neighbor during class unless instructed. Disruptive behavior is not appreciated. You will be asked to leave the classroom for the remainder of the class.
- (d) **Guests and Children.** Only authorized persons are allowed in the classrooms. College liability coverage does not extend to guests or children and thus they are not allowed in the classroom. If a student needs assistance with childcare during class time, please contact the EOPS office. EOPS may be able to help with long-term day care; however, it does not provide day-care service on a drop-in basis.

9. College Policies.

- (a) **Academic Honesty:** According to the Shasta College Student Handbook and the Shasta College Catalog, there are a number of unauthorized behaviors that violate the campus academic honesty policy. Each student should become familiar with the policy. Failure to acknowledge the work of other scholars constitutes an egregious breach of ethics and is a violation of civil law. You must, in all cases, do your own work, acknowledge sources, and document them appropriately. Otherwise, disciplinary sanctions will be applied. If you have any questions about plagiarism, please do not hesitate to contact me. In other words, cheating of any sort will not be tolerated and will result in an F for the assignment, quiz, or exam, and the case may be reported to the Dean of Students.

- (b) **Student Conduct and Discipline:** In accordance with the Student Code of Conduct (Board Policy 5500), students are expected to obey all California State laws and all Federal laws that pertain to behavior on a college campus. Shasta Colleges jurisdiction and discipline shall be limited to conduct that occurs on Shasta College premises or that is related to school activities. Any student found to have committed misconduct is subject to the disciplinary sanctions outlined in Board Policy, Section 5520.
 - (c) **Dropping:** If a student misses two consecutive weeks of class or more it may be assumed they are no longer interested in the course. School policy notes that these students may be dropped by the instructor either on census day or via the instructor initiated drop process. Nevertheless, if the student decides to stop attending, it is always the students responsibility to officially drop or withdraw from the class.
 - (d) **Academic accommodations imposed by a disability:** If you feel that you will need academic accommodations in this class due to limits imposed by a disability then contact the office of Disabled Students Programs and Services (DSPS) (242-7790) to make the necessary arrangements. It is the student's responsibility to provide documentation that verifies the disability and the type of limitations that may result. The DSPS office has been delegated the authority to, 1) evaluate that documentation and determine if it is sufficient to justify accommodations, 2) determine which accommodations are appropriate, and 3) facilitate the provision of approved accommodations.
10. **Tentative Schedule.** This class will progress through the entire book. The first exam will be over Chapter R and S. The second exam will cover Chapter E. The third exam covers Chapter F, and the fourth exam covers Chapter G. Exam dates will be announced in class at least one class prior to the exam.

Please note that this is a tentative schedule and is subject to change by the instructor. Changes will be announced in class are the the responsibility of the student to be abreast of such changes.