



CATALOG DESCRIPTION

Instructs the student on the basic operations of arithmetic applied to whole numbers, integers, fractions and decimals. Topics include measurement conversions, scientific notation, percent, ratios and proportions, basic geometry, formulas and the introduction of variable expressions and linear equations.

Prerequisites: Appropriate Accuplacer score or pass of MATH 050

Semester Offered: Fall, Spring and Summer

Common Student Learning Outcomes

Upon successful completion of San Juan College programs and degrees, the student will demonstrate competency in...

BROAD AND SPECIALIZED LEARNING

Students will actively and independently acquire, apply, and adapt skills and knowledge with an awareness of global contexts.

CRITICAL THINKING

Students will think analytically and creatively to explore ideas, make connections, draw conclusions and solve problems.

CULTURAL AND CIVIC ENGAGEMENT

Students will act purposefully, reflectively, and ethically in diverse and complex environments.

EFFECTIVE COMMUNICATION

Students will exchange ideas and information with clarity in multiple contexts.

INFORMATION LITERACY

Students will be able to recognize when information is needed and have the ability to locate, evaluate, and use it effectively.

INTEGRATING TECHNOLOGIES

Students will demonstrate fluency in the application and use of technologies in multiple contexts.

Student work from this class may be randomly selected and used anonymously for assessment of course, program, and/or institutional learning outcomes. For more information, please refer to the Dean of the appropriate School.

General Learning Outcomes

Upon successful completion of the course, the student will be able to...

1. Real Numbers
2. Geometry and Measurement
3. Ratio, Proportion and Percent
4. Calculator Usage

Specific Learning Outcomes

Upon successful completion of the course, the student will be able to...

- 1.1 perform operations (addition, subtraction, multiplication, division and exponentiation) with decimals whole numbers, signed numbers and fractions
- 1.2 understand prime factorization
- 1.3 find the least common multiple and greatest common factor of any set of numbers
- 1.4 recognize when and how to estimate and approximate whole numbers, fractions and decimals to approximate values
- 1.5 correctly apply the order of operations to any set of numbers
- 1.6 know the commutative, associative and distributive laws
- 1.7 manipulate simple algebraic expressions and solve linear equations
- 1.8 truncate and round numbers
- 1.9 locate points corresponding to any number on the real number line
- 1.10 recognize when to estimate, approximate or compute exact values
- 1.11 apply the rules for simplifying expressions

- 2.1 articulate the significance of and need for units of measurement
- 2.2 work with both metric and US units of measurement, including performing conversions within each system and from one system to the other
- 2.3 calculate the perimeter of a polygon or circumference of a circle
- 2.4 explain the concepts of points, lines, planes, angles, and parallel and perpendicular lines to include units of measure
- 2.5 measure angles
- 2.6 recognize and name the various types of polygons
- 2.7 find the area, volume, and surface area of various two and three-dimensional figures to include units of measure
- 2.8 calculate, use and simplify squares and square units
- 2.9 articulate the significance of and wide variety of uses of the Pythagorean Theorem and demonstrate the ability to use the Pythagorean Theorem
- 2.10 know the value of pi

- 3.1 set ratios and understand what they represent
- 3.2 calculate rates and unit pricing
- 3.3 set up and solve proportions, including similar triangles
- 3.4 set up and solve variation problems
- 3.5 know how to compute percents, convert numbers to percents and percents to numbers
- 3.6 model applications requiring percents
- 3.7 calculate percent of change
- 3.8 calculate discounts, commissions and simple interest

- 4.1 using the calculator, perform operations involving order of operations agreement, exponentiation and roots of number

Additional specific requirements for the course: A basic scientific calculator is required; however scientific calculators will not be allowed on some coursework and exams. Students must be able to demonstrate mastery of all operations on rational numbers without the use of calculators. We highly recommend the student use a TI-30IIX, Texas Instruments calculator.